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THE WORLD ADMINISTRATIVE RADIO CONFERENCE AND INTERNATIONAL COMMUNICATIONS POLICY

HEARINGS

BEFORE THE

SUBCOMMITTEE ON INTERNATIONAL OPERATIONS

OF THE

COMMITTEE ON FOREIGN AFFAIRS HOUSE OF REPRESENTATIVES

NINETY-SIXTH CONGRESS

JUNE 14, 1979, AND JULY 31, 1980

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THE WORLD ADMINISTRATIVE RADIO CONFERENCE AND INTERNATIONAL COMMUNICATIONS POLICY

THURSDAY, JUNE 14, 1979

HOUSE OF REPRESENTATIVES,
COMMITTEE ON FOREIGN AFFAIRS,
SUBCOMMITTEE ON INTERNATIONAL OPERATIONS,
Washington, D.C.

The subcommittee met at 10:08 in room 2200, Rayburn House Office Building, Hon. Dante B. Fascell (chairman of the subcommittee) presiding.

Mr. FASCELL. The subcommittee will come to order.

We meet today to discuss the progress of your preparation for the 1979 World Administrative Radio Conference to be held this year in Geneva from September 24 through November 30. As the members probably realize, this is the first such conference in 20 years to discuss virtually all uses of the radio spectrum and its impact will more than likely extend for the next 20 years.

The political implications of this conference in particular both reflect past and present struggles in other international forums and will affect useful discussions. Therefore, it is vital that the U.S. performance at this conference be strong and effective.

You have before you a list of the delegations going there. Mr. Glen Robinson who is chairman of the delegation is prepared to review with us the preparations for the conference. Having had many discussions with him now over a considerable time I can say that a great deal more time and effort has been spent in the preparation of this conference than perhaps for any in the past. I say that without being derogatory to anybody who was involved in the past but times have changed and the politics have changed and the situation is a great deal more difficult.

Anyway, Mr. Robinson, we are delighted to have you here. I know you have a prepared statement so you may proceed.

STATEMENT OF GLEN O. ROBINSON, CHAIRMAN, U.S. DELEGATION, 1979 WORLD ADMINISTRATIVE RADIO CONFERENCE

Personal: Born: June 6, 1936, Salt Lake City, Utah; Married: (wife Kay); two children (Dean 16, Jennifer 12).

Professional Background: Chairman, U.S. Delegation to World Administrative Radio Conference, 1978–72.

Professor of Law, University of Virginia, 1976.

Commissioner, Federal Communications Commission, 1974–76.

Professor of Law, University of Minnesota, 1967–74.

Private law practice, 1961–67.

Military Service: U.S. Army, Armor Corps, 1962–64.

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Education: LLB, Stanford, 1961; Note Editor, Stanford Law Review. AB, Harvard, 1958. Prior college education: two years at Utah State University.
Books: (1) The Administrative Process (with E. Gellhorn) (West Pub., 1974). (2) The Forest Service: A Study in Public Land Management (Johns Hopkins Press, for Resources for the Future, 1975).
(3) Communications for Tomorrow: Policy Perspectives for the 1980s (ed. and contrib., Praeger, 1978).
Articles: (1) The FCC and the First Amendment: Observations on 40 Years of Radio and Television Regulation, 52 Minnesota Law Review 67 (1967).
(2) Radio Spectrum Regulation: The Administrative Process and the Problems of Institutional Reform, 53 Minnesota Law Review 1179 (1969).
(3) The Making of Administrative Policy: Another Look at Rulemaking and Adjudication and Administrative Procedure Reform, 118 University of Pennsylvania Law Review 485 (1970).
(4) On Reorganizing the Independent Regulatory Agencies, 57 Virginia Law Review 947 (1971).
(5) Wilderness: The Last Frontier, 59 Minnesota Law Review, 1 (1975).
(6) Perspectives on Administrative Law (with E. Gellhorn), 75 Columbia Law Review, 771 (1975).
(7) The New Communications: Planning for Abundance, 53 Virginia Review 377 (1977).
(8) The Federal Communications Commission: An Essay on Regulatory Watchdogs, 69 Virginia Law Review 169 (1978).

Mr. ROBINSON. Thank you, Mr. Chairman.

Members of the committee, it is a very real pleasure to be here with you today to review the progress in our preparations for the 1979 W.A.R.C. or WARC as we sometimes affectionately call it.

This is, as you have stated, Mr. Chairman, a very important conference. You correctly pointed out that the last such general conference of comparable scope was 20 years ago and there seems to be a general consensus that there will not be another such conference of comparable scope for another 20 years. So what this means is that we have to catch up with 20 years of the past and to forecast events 20 years ahead. It is obviously a very challenging task. If you stop to think about the world of communications that we know today, it is obviously very much different than the world 20 years ago in 1959 and probably it will change as much again in the next 20 years. The one certainty in all this is that electronic communication, however it will develop, will certainly grow in importance.

A central role of information in electronic communications in modern economies has been such as to induce some observers to describe the current era as the information age. There are indeed some impressive statistical studies to support that characterization. One study in particular with which I am familiar purports to show that as much as one-half of the GNP is now devoted to the collection, storage, manipulation and transmission of information.

Mr. FASCELL. Now if we just knew how to use it.

Mr. ROBINSON. Now if we just knew how to use it, we would be home free.

You don't really have to trust the precise figure but I think you can gage from that figure the order of magnitude which information and communications generally assume in our modern society and it is clear that the trend is on the increase. Information and communications are becoming more and more important. Now of course not all of this communications is electronics but I don't think that it will be denied that electronic communications, electronic information storage retrieval and related activities are the dominant communications and information activity and that, too, is increasing.

Obviously, to the extent that electronic information and communications become more centrally important to a modern society, so indeed does the radio spectrum because the radio spectrum is the central means by which electronic information is transmitted among people. That in a nutshell describes the importance of the World Radio Conference that convenes this September.

By regulating the use of the spectrum and setting the standards for the use of the spectrum, this Conference can exert a powerful influence on the character and the flow of information both internationally and nationally. Now, as with other conferences, we are not bound by the Conference except insofar as we submit and ratify it. However, it must be borne in mind that the radio spectrum is a rather unique international resource which requires a measure of international agreement in order to be effectively used at all. You simply cannot have everyone doing their own thing.

As a nation that is not only a major, if not the major, user of the radio spectrum but one which uses it around the globe, we have a special strong interest in maintaining a working international consensus on how this resource is utilized worldwide. Now I should point out that this does not mean that all nations everywhere have to agree precisely on the patterns of use. I think there has been some misunderstanding on that. Many uses, indeed perhaps most uses, of the radio spectrum can be and are in fact determined largely on a regional or a national basis. Nevertheless, there must be some degree of international consensus on the rules of the game, some international agreement not only on the frequencies that are used worldwide but on how to identify those which require worldwide agreement and those which can be used according to national or regional patterns. This is what the WARC is all about.

Against this background I might say with a note of quiet pride that we have been preparing for this Conference with uncommon effort. Mr. Chairman, you mentioned that fact a moment ago. A reporter for the British journal, The Economist, recently noted that the United States was preparing for the WARC as for the Olympic games and there is some accuracy in that characterization even though the precise analogy between the WARC and the Olympic games may be a little strained.

Our preparatory efforts certainly have been more elaborate than for any previous conference of this kind. Our efforts began about 5 years ago as a joint undertaking by the Federal Communications Commission; the then Office of Telecommunications Policy which became, as you know, the present National Telecommunications and Information Administration; and the State Department. Since that time virtually every major Federal agency—offhand I cannot think of any exceptions, as a matter of fact—as well as industry and public users almost too numerous to mention have participated quite actively in shaping the U.S. requirements and the U.S. proposals based upon those requirements.

Most of the proposals were submitted to the ITU on schedule at the end of January of this year. The remainder of our proposals dealing with the HF spectrum in particular were delayed pending the internal resolution of a domestic conflict and controversy over the allocations for high-frequency broadcasting. Following the resolution of this controversy, these proposals were submitted in April.

READEX FICHE

The development of our proposals is, of course, only the first step in the preparations for the Conference. We have been actively developing detailed position papers, evaluating not only our proposals and the proposals of others but examining alternatives, tradeoffs, and trying to establish a pattern of bargaining for the Conference—all this in the light of what we have learned are the views of other countries.

We have, in fact, been very active in attempting to learn the views of other countries. I just returned a week ago from bilateral discussions in London, Paris, and Algiers. Several of my colleagues on that team went on to Cairo for bilateral discussions, other representatives are now in Latin America, and one of my assistants will visit Belgrade this month. Before that round of bilaterals, we met in Washington with Soviet representatives which was a follow-on to bilateral discussions we had in Moscow last year. Two weeks after that I was in the People's Republic of China. A week before that we held discussions in Australia with the Australians, and with the Indonesians. We went on to India for discussions there and prior to that, we had discussions in both Asia and the Pacific.

Before that, in February and March we had discussions in both Africa and Latin America. That is just the schedule since the end of January. Actually that is just illustrative of an effort that has been going on now for about 2½ years. We have covered well over 50 countries in every continent save one, Antarctica. We have not gotten down there yet.

Our preconference discussions are pretty much now coming to a close. We anticipate one very important multilateral meeting in Bogota, Colombia, this July—a meeting of the OAS countries to discuss specifically proposals for the WARC. We may schedule a few other discussions but they will be very selective.

From this point on our primary emphasis, our primary task, will be an intensive evaluation of proposals submitted by the other members of the ITU. We now have received nearly 100 documents from the ITU containing proposals from most of the countries that are going to end up submitting formal proposals to the Conference, and we are examining these along with our other information and intelligence sources regarding foreign proposals.

I should at this point say a word about these bilateral efforts because it is really quite unique in our preparations for an ITU conference of this kind. It is the only time we have really done this and we have found that it has been enormously valuable. I hope that we will be able to continue this in the future because we have established relationships, we have made contacts, we have been able to establish a dialog—to use that much overused phrase—with countries in ways we had never done before. We think this will have an important spillover effect not only at the WARC but the many conferences to come. It may even have an important spillover outside the immediate context of the ITU.

Let me turn at this point to some of the main conference issues. I won't attempt to outline the specific proposals we are making. I would be happy to supply for the record, if you wish, a copy of our proposals or a summary. They are really quite detailed. You get

some idea of the magnitude by looking at this volume here which contains essentially the U.S. proposals.

Mr. FASCELL. We would like to have a copy of the U.S. proposals for the committee files and make the summary available for the record if you have a summary available.

Mr. ROBINSON. All right.

Mr. FASCELL. That can be put into the record.

Mr. ROBINSON. All right.

[The material referred to follows:]

SUMMARY OF U.S. PROPOSALS FOR THE 1979 WORLD ADMINISTRATIVE RADIO CONFERENCE (WARC)

ALLOCATIONS

Broadcast Services

Frequencies for different types of radio and television broadcast services are spread throughout the spectrum. The services for which we propose new or changed allocations include:

Medium frequency broadcasting. To ease present domestic congestion and meet future expansion, a number of proposals for more efficient use of MF broadcast frequencies are under study by the FCC and NTIA. Among these is an expansion of the present AM band. To provide for such a future expansion, the U.S. proposal recommends new MF broadcast allocations for Region 2 (Western Hemisphere).

High frequency broadcasting. The primary U.S. users of this service are the Voice of America, Radio Free Europe and Radio Liberty, together with a small number of religious shortwave stations. To ease international frequency congestion which has resulted from the increase in shortwave broadcasting since 1959, we propose significant increases in allocations.

Broadcasting Satellite Service (BSS). Essentially BSS involves transmitting television or aural radio signals to large numbers of small earth terminals - as small as a meter wide, depending upon the strength of the incoming satellite signal. The U.S. proposals for this service are generally designed to strengthen and expand prospects for its use. They include:

— Modifications in current regulations to permit aural broadcasting from satellites in one region of the UHF band.

— Relaxation of technical restriction in the 2.5 GHz broadcasting satellite band to allow for possible use of an innovative BSS technology designed for large numbers of small earth terminals.

— Realignment of allocations at 12 GHz to provide for frequency separation between BSS and fixed satellite service. This is the most important new element in our BSS allocation proposal.

— Provision for new allocation in the "higher" parts of the spectrum to allow for future expansion of BSS services.

Fixed and Fixed Satellite Service

The fixed service provides point-to-point communications. Fixed service allocations occur throughout the spectrum but for purposes of 1979 we are primarily interested in the higher reaches of the spectrum. Of special interest is the fixed satellite service. The U.S. proposals are designed to accommodate the frequency requirements for varying fixed satellite uses here

and abroad. A sizeable increase in allocations to meet [illegible]'s international fixed satellite requirements is proposed. Domestically an expansion of allocations at 12 GHz is proposed, as noted earlier, to meet commercial needs. In addition, the U.S. proposes new fixed satellite allocations in the portion of the spectrum above 40 GHz in anticipation of technological advances which will make these bands available for future needs.

Mobile and Mobile Satellite Services

Mobile communications - to ships, cars, airplanes, or individuals on foot - is one of the fastest expanding areas of communications. By its nature, it depends entirely on radio links. Until very recently, it relied primarily on the high-frequency bands for medium to long distance circuits. In the past decade, improvements in satellite technology have added a new dimension to the prospects for meeting vastly expanded mobile communications needs.

In the HF bands, mobile operations have shared successfully with the fixed service for many years. Because of the increasing need for allocations of this type, the U.S. is proposing that mobile service allocations be added to several HF fixed bands on a co-equal primary basis. We propose minor changes in aeronautical mobile and significant increase in maritime mobile, mainly in the HF bands.

Mobile satellite services are going to be an increasingly important component in world communications. We propose to meet this requirement to accommodate Defense needs in the 7/8 GHz band.

A commercial maritime satellite system, operated by the Communications Satellite Corporation, is serving ships of several nations. This service will be taken over by a new International Maritime Satellite Organization (INMARSAT). Frequency allocations are proposed to meet this requirement and a rather more speculative "AEROSAT" system.

Another key area is land mobile service, also expanding rapidly as the result of demands for connection to the public telephone network, small business applications, police and other local government operations, etc. We propose shared allocations with broadcasting in the UHF band, as well as allocations for a land mobile satellite.

Radiodetermination Services

Radar services are another area where improved technology has widened the prospects for improved worldwide communications services. U.S. proposals call for important new allocations for radiodetermination; of special importance is a radionavigation satellite service to provide for the new NAVASTAR Global Positioning System (GPS). Using 24 polar-orbiting satellites, GPS will provide worldwide accurate position information to ships and planes when it becomes operational during the next decade.

Amateur Service

Amateur radio is a long-standing element in U.S. communications. It is important not simply not simply as a hobby but also because of the important services it can perform in disaster relief and other emergencies. The U.S. proposals call for moderate increase in frequency allocation for the amateur service, including some which will improve the possibility of amateur communication on a worldwide basis through the entire 24 hour day. Other increases are proposed for amateur satellite service. The amateurs have operated a satellite program (OSCAR - Orbiting Satellite Carrying Amateur Radio) for a number of years and have added considerably to technical data on the use of low-orbit satellites.

Earth Exploration Satellite Service

The sensing satellites are among the most significant and useful developments to come out of space research. There are two types of sensors: active and passive. Active sensors are space radar-like devices that utilize information contained in the reflection of a radiated signal. Passive sensors collect data based on natural emissions from the earth's land masses, oceans and atmosphere or reflection of light from another source (e.g., the sun). Sensors have important uses for global economic development and environmental planning. The U.S. proposals provide for expanded allocations for spaceborne passive and active sensors and for space-to-space data links for transferring sensor data to relay satellites.

Radio Astronomy

Radio astronomy has become an increasingly important tool for studying both our own galaxy and beyond. Technically the problem is similar to the problem of protecting passive sensors. The need is to assure astronomers interference-free "quiet zones" around their frequencies in order to permit accurate readings of very weak signals from outer space. The U.S. proposals provide for a significant increase in radio astronomy allocations.

Solar Power Satellite System

We propose a single frequency for an experimental solar power satellite system. NASA and DOE are exploring the possibility of a synchronous satellite to collect solar energy, convert it to direct current and then transform it into microwave power for transmittal to collecting terminals on earth where it would be converted into usable electric power.

NON-ALLOCATION PROPOSALS

The non-allocation proposals in the U.S. submission to the ITU relate to changes in technical parameters to present services and to possible changes in ITU procedures for administering spectrum allocations.

Some of the technical proposals are very important but controversial. The most important deal with various aspects of sharing among different services — which is very important to accommodating U.S. proposed changes to the allocations.

With regard to procedural changes, we propose few changes because we think the present procedures have worked well. We are, however, studying foreign proposals for procedural changes and it is likely we will affirmatively support some of these.

Mr. ROBINSON. We filed a summary, as a matter of fact, as part o
our proposal so it is very easy to pull that summary out.

I would like to outline very briefly some of the broad objectives an
then to come back and assess what are some of the major problem
areas that I think we face at the conference.

First, perhaps the most obvious objective, we seek to achieve a
international agreement on necessary and incremental changes—and
I want to underscore the words "incremental changes"—in frequency
allocations and related regulations.

Mr. FASCELL. You better translate it into English first.

Mr. ROBINSON. OK. Let me say that I put the word "incremental"
in juxtaposition to "wholesale." We do not see the need for a wholesale
revision of the radio regulations or the table of allocations. What we
have tried to do is to take particular areas where we think the needs
have changed or new needs had come along and to provide for those
within the overall framework of the present regulatory scheme.

When I say "incremental" I mean adjusting the regulations at the
margin, so to speak, making changes here and there in particular
allocation bands, fine tuning the procedural regulations—things of
this character—as opposed to looking at the conference as if it had to
reinvent the whole wheel. That is an important part of our strategy
because we do not think that this conference should attempt to start
from scratch. The ITU structure as it now exists is a valuable one,
it is a useful one, and it has worked. The radio regulations, we believe,
are effective and they serve not only our interests, but the interests
of the world at large. So when I say "incremental," I mean marginal
changes to adjust, as opposed to overhauling, the radio regulations.

Mr. FASCELL. In other words, prepare a spoke but not build a wheel.

Mr. ROBINSON. That is it exactly.

We seek also to maintain those procedures which provide maximum
flexibility and adaptability to changing needs. I will come back to the
significance of that particular objective in a moment.

Mr. FASCELL. And the mechanism that is going to be used to
accomplish that?

Mr. ROBINSON. Yes.

Three, we wish to strengthen the role of the ITU as the inter-
national organization responsible for implementing WARC decisions
consistent, of course, with our sovereign rights. We are aware that
there has been some unhappiness with the ITU. We, ourselves, have
shared some of that unhappiness. However, we think the ITU has
been a very effective and perhaps one of the most, if not the most,
effective specialized agencies in the U.N. system and we whole-
heartedly support the ITU in its current role.

Four, we support changes in international allocations and related
frequency management procedures which will accommodate the needs
of other nations consistent, of course, with our own essential require-
ments. Obviously we are cautious in what we embrace. We do have a
genuine interest in supporting the needs and requirements of other
countries while avoiding the impact of efforts which we think are
misguided and perhaps politically motivated which might work to the
detriment of the current system.

Now laying aside those four general objectives, how well will we be able to secure our objectives and our specific proposals? Well, as you might expect, there are several schools of thought and the two most prominent schools of thought happen to be at polar ends of the spectrum. On the one hand there are the conventionalists, if I may call them that, who see the Conference as pretty much following the traditional pattern, the technical pattern which has been described as a kind of an old boys' club—some disputes, some controversy but largely contained within a technical environment, certainly one largely free of political confrontation.

Mr. FASCELL. I also believe in the Easter Bunny and the Tooth Fairy.

Mr. ROBINSON. No comment, Mr. Chairman.

At the opposite end of the spectrum there is another school which I don't know exactly how to describe, but it is at the opposite end of the pole. It sees the WARC as essentially a Donnybrook. One observer in what I can only describe as verbal abandon has described the Conference as the coming "Armageddon" of the new world information order. I think such apocalyptic forecasts are not apt. I think that they are the product of some overexercised imagination. There is a little bit of truth in them, but then there is a little bit of truth in the conventional view as well and in fact I think that seeing the truth on both sides leads to an intermediate judgment about the probable outcomes of the Conference.

Let me outline in specific terms what I think this implies. First of all, I expect that there will be considerable resistance to proposals to which we attach a great deal of importance in the high frequency spectrum. We have, as you probably know, Mr. Chairman, asked for substantial increases in allocations to HF broadcasting.

Mr. FASCELL. Excuse me. Do you want to stop right there? That is why I had that little piece of paper brought up to you if it is of any value. You are talking about HF which I assume means high frequency.

Mr. ROBINSON. High frequency broadcasting.

Mr. FASCELL. Does that piece of paper represent the total spectrum?

Mr. ROBINSON. This represents the total spectrum up to 300 megahertz.

Mr. FASCELL. What are you talking about?

Mr. ROBINSON. I am talking about this line right here. You will see from the different colors here that there are a lot of different services involved. Broadcasting has only a relatively small part of that.

Mr. FASCELL. When you are talking about broadcasting, what are you talking about?

Mr. ROBINSON. I am talking about really two operations, domestic broadcast operations and international broadcast operations.

Mr. FASCELL. When you are talking about broadcasting with respect to the high frequency spectrum, what are you talking about? Are you talking about radio or something special?

Mr. ROBINSON. No. For our purposes, from our point of view, I am talking about VOA or Radio Free Europe line here.

Mr. FASCELL. What does that mean?

Mr. ROBINSON. International broadcasting.

Mr. FASCELL. You would not be able to pick it up? You mean transmission?

Mr. ROBINSON. Yes.

Mr. FASCELL. That is on the high frequency band?

Mr. ROBINSON. Yes.

Mr. FASCELL. Broadcasting?

Mr. ROBINSON. Yes.

Mr. FASCELL. Did you say shortwave?

Mr. ROBINSON. Shortwave and international.

Mr. FASCELL. You are talking about international shortwave transmission?

Mr. ROBINSON. We are talking about primarily international broadcasting but the broadcast allocations are not limited to international broadcasting and many countries use them for domestic purposes. That is an important point because what we have at stake are two rather different services—both called broadcasting services but they have different characteristics. The Soviet Union, for example, China, India—large countries such as these—use shortwave or HF broadcasting extensively for domestic operations the way we use AM–FM radio.

Mr. FASCELL. I didn't mean to distract you but I just wanted to be sure we understood what you were talking about when you said you expect considerable resistance to the U.S. proposal with respect to substantial increases in high frequency broadcasts.

Mr. ROBINSON. Yes.

Mr. FASCELL. I gather "allocations" means that the United States is seeking for itself a better allocation or more allocation or greater allocation or whatever it is that you are talking about.

Mr. ROBINSON. Yes. We are seeking a larger allocation for the service which would be used worldwide, not just by us, of course, but by everyone worldwide. We are seeking it for all broadcasters everywhere. Our motivation in seeking it is for our international broadcast operations but we recognize that there will also be domestic operations as well.

Mr. FASCELL. Excuse me for interrupting. I think you have to stop right there and make it clear at least to me—maybe everybody else understands this.

When you are talking about a greater allocation on that high frequency spectrum, will you please explain what it is that you mean?

Mr. ROBINSON. Well, in simplest terms it means taking frequencies from other services and allocating them to broadcasting. Let me find a particular band here.

Mr. FASCELL. You mean the amount of activity on that particular band is finite?

Mr ROBINSON. It is finite. That is kind of a tough technical question because our proposals——

Mr. FASCELL. More or less then.

Mr. ROBINSON. More or less because our proposals do not propose exclusive allocations and that is the heart of the controversy.

Mr. FASCELL. I am trying to do anything but get technical, Mr. Robinson.

Mr. ROBINSON. So am I.

Mr. FASCELL. So maybe you will have to take it down one more notch to be simple for me.

Mr. ROBINSON. What I am suggesting is that we would expand this band. Like this purple band, we would expand those bands particularly into adjacent bands in most cases. What that would mean is if we were proposing exclusive allocations we would take that pink band there which would become purple. That is not what we are proposing. We are proposing a sharing arrangement so that both services can operate, both the broadcasting and the other service.

The other service in all cases here for practical purposes is fixed operation. Fixed operation is a point-to-point service for telephony, telephone, and telegraph. The fixed service is widely used particularly outside the United States for ordinary telephone relay. The developing countries in particular are resistant to the idea of giving up or even sharing large parts of that spectrum.

Mr. FASCELL. Even though they are not using it?

Mr. ROBINSON. They are using it.

Mr. FASCELL. They are using it?

Mr. ROBINSON. They are using it. What we are trying to convince them is that they can continue to use it on a time shared or a geographically shared basis.

Mr. FASCELL. Why does the United States want it and why are the developing nations opposed to it?

Mr. ROBINSON. We want it because we have a great amount of congestion in the broadcast bands and we foresee expanded operations in shortwave broadcasting over the next 20 years. We just don't think it can be accommodated within the present allocations.

Mr. FASCELL. Well, give us an example what kind of a problem we are running into.

Mr. ROBINSON. Well, the problem we are running into is that basically the developing countries in particular, or many of them, just do not want to sacrifice.

Mr. FASCELL. What I meant by that is, what kind of problem is the United States running into which causes it to submit this proposal, the crowding or whatever it is?

Mr. ROBINSON. The reception difficulties.

Mr. FASCELL. The reception difficulties, interference.

Mr. ROBINSON. Interference.

Mr. FASCELL. Garbling.

Mr. ROBINSON. Yes.

Mr. MICA. Like what, for instance? In what area?

Mr. ROBINSON. I am sorry. I don't understand your question.

The programs are not getting through, they are being interfered with.

Mr. FASCELL. What programs?

Mr. ROBINSON. No; radio broadcasting. News, public affairs, entertainment, music, whatever VOA puts on. Mr. Peter Strauss is back here and I think he can give you a better view of what VOA's program traffic is like than I can. It is the evening news, public affairs, music, whatever is carried.

Mr. PRITCHARD. How about our local radio stations?

Mr. ROBINSON. No; our local radio stations are not affected because we don't operate domestically in this band. Our domestic radio stations operate in the MF and VHF regions.

Mr. PRITCHARD. But other countries do.

Mr. ROBINSON. Some other countries do.

Mr. PRITCHARD. And that is the rub.

Mr. ROBINSON. Well, that is the complication, yes. The biggest problem, however, is not that other countries operate domestically in the band but that other countries have fixed service requirements, point-to-point telephony, and they don't want to sacrifice those bands in order to increase broadcast allocations. That is where we are running into the conflict such as it is. It is going to be a very controversial item. I don't say that——

Mr. PRITCHARD. What benefit is it for that country to give it up to us?

Mr. ROBINSON. They are not giving it up to us. What they think they are sacrificing is their access to the fixed service which we don't use as much as they do. They would be giving it up to the broadcast service which they and we jointly use but they would be giving up their telephone relay systems, their equivalent of our microwave relays.

Mr. FASCELL. I think you can appreciate why we have been going to square one in this discussion constantly, Mr. Robinson, because it is not only an educational process but it is also a perception process.

Mr. ROBINSON. I understand.

Mr. FASCELL. Developing countries believe they own that and somebody is trying to take it away from them.

Mr. ROBINSON. That is precisely right.

Mr. FASCELL. That is going to be difficult enough.

Mr. ROBINSON. That is precisely right.

Mr. FASCELL. It is like the old story. I just learned how to turn the knob on the radio and you are throwing international broadcasting at me. I have not figured out how to get the picture on my TV set yet. So, you know, we are going to have to be sure that our perceptions of what you are saying are on the same wavelength or we are going to be at opposite ends of the spectrum.

Mr. ROBINSON. Very good.

Mr. FASCELL. How about getting to the second point.

Mr. ROBINSON. First of all let me say on all the HF services, and there is certainly a degree of competition, we expect that the primary difficulty is going to be with the lesser developed countries, the developing countries. They are the ones who have the most pressing, continued need for this fixed service and who are resisting the increased allocations for broadcasting the most strenuously.

The second area of major difficulty which really covers almost all the rest of the spectrum here is a series of services, or really it is a varied set of services, all using satellites. It deals with satellite allocations. Here the problem is not uniquely one of North and South, it is not so much a problem between the developing and the developed countries. In fact, the largest problem we have is reconciling our demands for new satellite allocations with those of other developed countries and some of our most pressing problems are with our Western allies.

Mr. FASCELL. Now, is the satellite problem on that chart?

Mr. ROBINSON. No, sir.

Mr. FASCELL. You say no, sir?

Mr. ROBINSON. Because "satellite" is not a service. I would have to identify the services individually. They are all satellite services.

Mr. FASCELL. The satellite is just a vehicle by which the service is going to be delivered.

Mr. ROBINSON. That is right. I will have some—well, maybe some of them are indicated. You have some Intelsat services indicated here. That is a fixed satellite service. There should be some broadcast satellites here.

Mr. FASCELL. Isn't that controlled by the country that put the satellite in the air?

Mr. ROBINSON. The allocations are made to a service and the way in which a country gets its use of that, its share so to speak, is by filing with the IFRB a notice of assignment to a particular user, whether it is a satellite user or an AM broadcaster.

Mr. FASCELL. So just because I have a satellite that can do the job does not necessarily mean I am going to be able to provide somebody service through the satellite.

Mr. ROBINSON. You notify the IFRB of what allocations you want and you coordinate those requirements with other countries.

Mr. FASCELL. You may then put a satellite in the air?

Mr. ROBINSON. You may then put a satellite in the air. That is the way it is done. Now the Intelsat, of course, is a global system.

Mr. FASCELL. Global system. What does that mean?

Mr. ROBINSON. It means the whole world for all practical purposes participates in it. There are over 100 users and 100 owners.

Mr. FASCELL. Is that under a consortium?

Mr. ROBINSON. Yes.

Mr. FASCELL. Is it a separate written document?

Mr. ROBINSON. Yes. We participate in Intelsat through Comsat and others do so through their post and telecommunications ministries.

There are several services at stake here in this frequency region. I won't go into the details but there are the broadcast service, fixed service similar to ours, the mobile satellite services, and also our domestic satellite services such as Comstar, RCA and Weststar and others. Some other services are: Industrial, Scientific, and Medical (ISM).

There is a new system which we are experiementing with called a solar power transmission system. You won't see that on your chart.

Environmental sensing, a new service which is now in use with Landsat and Seasat and is an expanding program as you may know.

Radio navigation satellites. The United States is pioneering the development of a new radio navigation satellite which has to be accommodated in the radio spectrum.

Amateur satellites for the amateurs, a variety of satellite services.

All of these are in varying degrees controversial and the thing that makes them most controversial is in the choice areas of the spectrum where we are trying to secure new allocations for them. There is a limited amount of space available and there is a cost penalty if you try to go up to the higher regions of the spectrum so everybody wants to crowd down around in this region of the spectrum—here, for example, this is SHF—or maybe down to the UHF region.

Third, and related to the problems of accommodating new satellite services, is the whole vexing problem of planning. Planning is a term of art in ITU parlance. It means that instead of having the flexible kind

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of assignment procedures which I described a moment ago whereb
you allocate to a service and then each country notifies the Interna
tional Frequency Registration Board of assignments to individu
users, you plan the band on a fixed basis. Every country gets a fixe
piece of the pie or a fixed slice of the orbital arc.

Now there is going to be a great deal of pressure at this conferenc
to have more of those kinds of plans than they have had in the pas
and it all has to do with the attempt to secure for the developing
countries in particular a guaranteed fair access to the spectrum and t
the geostationary orbit. This is, in contrast to some of the allocation
problems that I just mentioned, a distinctly north-south issue.

Mr. PRITCHARD. What do they do with that share?

Mr. FASCELL. Put their name on it.

Mr. ROBINSON. In many cases that is it.

Mr. PRITCHARD. In many cases they do not have the capacity to
use it.

Mr. ROBINSON. In some cases, in many cases, they would not.
That is the nub of the problem right there. Without being disparaging
of Togo, I daresay it is a very unlikely prospect that they will launch a
satellite anytime within the next 20 years. It is that kind of problem
and yet planning would lead to that kind of chopping up of the
spectrum.

We think it would destroy the flexibility which has worked, we
believe, very well in accommodating not just the developed country
users but the developing as well. Many developing countries are
launching their own satellites now, they are not having that much
difficulty getting their fair share, but we are afraid that if you tried
to plan the entire spectrum or the orbital arc it would just be produc-
tive of inefficiency and waste.

Mr. PRITCHARD. Is there a shortage now?

Mr. ROBINSON. Well, that is a matter of perception. We say no as
a practical matter. There are obviously some constraints, yes, but
there is enough spectrum, there is enough orbital arc to accommodate
the present and foreseeable future uses. Technology is constantly
expanding—not only expanding the reach of usable spectrum upward
but also permitting more intensive use of any particular piece of the
spectrum so technology really is allowing us to make much more
effective use.

The problem with the prefixed plans is that they have to be made on
the basis of an existing technology and they cannot be easily changed
as technology changes. You can imagine trying to develop a fixed
satellite plan on the basis of 1963 technology. The 1963 Telstar had,
I think, a 250-circuit capacity. Intelsat 5 when it is launched will have,
I think, a 24,000-circuit capacity, that order of magnitude. There is no
comparison. Now just in that period of time what would you do if you
were stuck now with a plan based upon an obsolete technology? That
would be like having roads built to the specifications of the model T
Ford.

Mr. FASCELL. And you had to wait 20 years to get back to review it.

Mr. ROBINSON. Well, we might not have to wait 20 years, we don't
know, but you would certainly have to wait longer than we think that
you should have to wait.

We also think there is another problem and that is once you get into this business of trying to carve up prefixed parts of the pie, how do you determine what is a country's particular requirements? Well, you go ask them. What happens when you ask them?

Mr. FASCELL. The same thing that happens around here—they ask for the whole pie.

Mr. ROBINSON. That is right. If you want a test of what happens, go out and offer free lunches on the corner; there will be a long line waiting for them. Why not? Nobody can afford to turn away something that is free whether they want it or not. To them it is free. That perhaps is a crude way of characterizing it but that is the problem that actually has occurred in past planning conferences.

As I mentioned a moment ago, we have plans now. We do think that there is some merit to having plans for certain worldwide services where it is absolutely imperative. We accept, for example, planning for maritime mobile frequencies, aeronautical frequencies, safety of life services of that kind particularly. The problem that we face now is a pressure to extend the planning to two kinds of services where we don't think it is practical. One of them is the HF broadcast region that I spoke of a moment ago. Everyone would get their little share of frequencies.

The technical difficulties of working out a plan for that service are just mind boggling. The same thing with the fixed satellite service such as these Intelsat down links here you saw under the SHF line. Those are fixed satellite services. Again we don't see any practical way of planning that in advance. We vastly prefer to stay with the existing system which we think is workable but we are stuck with this problem of perceptions. The developing countries perceive that the present system locks them out, does not allow them access or that it will not allow them access 10 years from now when they are ready to launch their satellites.

We understand that perception. I mean it is a real concern, it is a legitimate concern, but we don't think that there is any way of developing a fancy plan that will guarantee to them what they want without really messing up the whole system, if I can put it bluntly.

We are prepared to examine the plans individually. If somebody can develop a plan, we will be happy to sit down and examine it critically to see whether it is workable. The problem we face right now is that everybody talks about planning the fixed satellite service, planning the HF broadcast service, but they don't come up with anything. They just talk about doing it and they want a commitment to do it without having any particular design in mind as to how it will be done.

We are considering other possible alternatives, some form of change in the regulation which would guarantee or assure equitable access. We stress equitable—fair and equitable—not necessarily equal. It seems to be quite impractical to expect that every country would have precisely the same access. But fair and equitable access we are all for, and we are all for trying to find some way of insuring that the developing world has it without trying to bend the system out of shape in ways which we think will not rebound to their benefit any more than ours.

Some of the technical issues also have a political dimension. There are some issues that are purely political, in the sense that they are really tangential to the conference itself.

Mr. FASCELL. Before you get into that, let's break right there to go and vote. Then we will come back and hear about the politics of this conference.

Mr. ROBINSON. Good.

[Whereupon, at 10:54 a.m., the subcommittee recessed and reconvened at 11:08 a.m.]

Mr. FASCELL. The subcommittee will reconvene and you can start telling us about the politics of this conference.

Mr. ROBINSON. To a certain extent I have, Mr. Chairman, because some of the most difficult political problems relate to this question of planning because the concern of the LDC's in this regard is very much of a whole dissatisfaction of their role in the international scheme of things and they perceive the need to gain greater independence in social and cultural affairs. First they won their political independence and then they have been struggling to get economic independence and the last of the major pushes is to get cultural and social independence. Communications is vital to that interest.

So having a share of the radio spectrum or the orbital arc is very important in terms of symbolic politics quite independent of whether they really require it for their operational services. In other words, they perceive that under the present system they are too beholden to developed countries and they see this planning as one way of guaranteeing that they will have equal stature in the communications field.

Mr. PRITCHARD. Under the present system now what is this international organization?

Mr. ROBINSON. The ITU, the International Telecommunications Union.

Mr. PRITCHARD. How is that decisionmaking done there? Is it by voting? Is it through commissioners? How does that work?

Mr. ROBINSON. The ITU has a permanent secretariat. There are actually several bodies of the ITU that function in semiautonomous ways but it is a group of——

Mr. PRITCHARD. Are all nations connected to it?

Mr. ROBINSON. Yes. There are 154 members of the ITU. They have a permanent body of civil servants that are elected at the various conferences. They won't hold elections at this conference but they hold elections at plenipotentiary conferences, for example. They are not a decisionmaking body in the sense of the Congress or the FCC but rather a facilitating mechanism. Members retain their sovereignty rights under the convention and the ITU is basically the servant of the members to help coordinate the views.

Mr PRITCHARD. Are the developing nations happy with this organization?

Mr. ROBINSON. Yes, they are. Some parts of it. They would like to see some parts of it strengthened because they perceive that the ITU has reasonably looked after their interests. That does not mean to say they are satisfied with the exact structure or the present procedures of the ITU; they would seek a number of changes there in favor of the developing countries.

Mr. PRITCHARD. Do they think that the developed countries have been dominating?

Mr ROBINSON. Yes, they do, to some extent. They have been dominating at least the procedures and the structure of allocations.

Mr. PRITCHARD. Is that because of the staff?

Mr. ROBINSON. No; that is because of the way in which the radio regulations are written, which are administered by the IFRB, for example, which is the central frequency registration board. The ITU is, I think, widely perceived among the developing countries as beneficial, benign, and helpful to them.

Mr. PRITCHARD. Well, I didn't mean to interrupt your presentation. Go ahead.

Mr. ROBINSON. I was saying that to some extent there are political forces behind these technical requirements but there is also another set of political issues that are not directly related to things like planning or frequency allocations. These are the kinds of issues that we have seen arise in UNESCO, they are the kinds of things we have seen arise in the U.N. system generally.

There is an emerging dialog about a so-called New World information order and you have probably heard something about that. This New World information order is a concept—it is at least a label—which we have accepted. We accepted that in a special political committee of the U.N. resolution last year, but so far it is a label without substance.

Whatever the substance of the so-called new world information order should be, we don't think that the WARC is an appropriate place to try to define it so we will resist efforts to debate, discuss, argue over such questions as free flow versus balanced flow of information—which is a prominent element in the new world information order today. We will downplay questions such as technology transfer which is a large issue in the debate over the new world information order, not because we are not willing generally to engage in discussion about these but because we don't think that the WARC is the proper forum for doing so. We are a little nervous that if we get bogged down in a lengthy rhetorical debate about abstract principles we won't get on with the business of rearranging that chart that I had out here a minute ago—which seems to have disappeared.

Mr. PRITCHARD. What kind of response have you been getting from these nations you have been visiting?

Mr. ROBINSON. Mixed. Usually in face-to-face discussions we have found even the most activist of the lesser developed countries—those, for example in the nonalined group—are willing to sit down and talk in concrete, specific terms about their problems and ours, but unfortunately as we have been following a number of meetings of the nonalined movement generally—meetings of the broadcast organizations in the nonalined movement and the telecommunications organizations in the nonalined movement—we see in some of those meetings an emerging rhetoric which disturbs us.

We see two things. We see first of all the kinds of proposals which I mentioned earlier—for planning of HF broadcast frequencies, for planning of fixed satellite frequencies, special allocation reservations or set-asides for the LDC's. Those issues we can handle on the merits

providing people will discuss them on the merits, providing they will be willing to sit down and negotiate on—I don't want to say technical basis but more or less on the basis of the proposals themselves, as opposed to bringing them forth under some sort of ideological banner such as the new world information order, the need to remove "ideological or cultural imperialism" and all that sort of thing.

The other side of these meetings, what is coming out, however, is not just the discussion of the HF plans, fixed satellite plans, but this other rhetoric—cultural imperialism, New World information order. We just don't think that is very productive. We just don't think it is very constructive to talk about those things. Some of that is going to take place at the WARC, there is no question about it; it takes place at every multilateral conference. Kept to a minimum, it won't bother us, but if it goes on too long, it could really sabotage the Conference.

We are, as I mentioned, developing positions to deal with all these issues as well as all the issues that are on the agenda and some that are not. I don't think that we can say we know everything that is going to arise at the Conference, but I will say without fear of contradiction that we have not yet been surprised by anything that we have encountered in the course of our preparations, and I think we are generally able to anticipate the major contingencies that will arise at the Conference.

Our strategy, as I said, is going to be to try to keep the discussion, the debate focused specifically on that chart that we were both looking at. We want to talk about specifics. If they want to talk about plans, we will talk about plans. If somebody will put a plan on the table, we will talk about it. We will talk about specific allocations to broadcasting, fixed service, fixed broadcast satellite, whatever. We are prepared to discuss all that. We have enough technical experts so I don't think we shrink from that task, but if we get mired in a general rhetorical debate it is not going to be a very comfortable 10 weeks, I can tell you that.

Mr. PRITCHARD. Do you feel you have some very strong allies going in on this?

Mr. ROBINSON. Yes, we do. The allies are not necessarily allies on all our proposals. I mean you sort of pick and choose your friends depending on what you are proposing but, yes, we have some close allies. I think we are very closely alined to many of the other developed countries although not to all. Interestingly enough, we have quite a number of parallels between the United States and the Soviet Union, even perhaps between the United States and China. Politics makes strange bedfellows and WARC is no exception. We are not entirely sure who we will line up with in the Conference but it would not be correct to say that the lineup of the Conference will necessarily follow general political lines. We even have some allies among the developing countries we think we can work very closely with.

Well, I mentioned a moment ago we had experts to deal with all these issues. I might say finally that we have been busy putting together a team of experts. I think you have a copy of the current delegation and it consists of 64 people not counting 8 congressional representatives. We have asked each House to submit four congressional representatives for the Conference.

In addition to this group we also have a large support staff now umbering over 30, so all told we will have over 100 people at the Conference. That is a lot of people to look after. We will also be supported by a backup team here in Washington. We have already picked hat team and identified who its contact points are.

So in sum, I think that we are reasonably well prepared for the Conerence. I don't think I would want to go there tomorrow, but maybe ext month and certainly by September I am sure we will be as well repared as we can be.

Thank you, Mr. Chairman. I will be happy to respond to questions.

[Mr. Robinson's prepared statement follows:]

PREPARED STATEMENT OF GLEN O. ROBINSON, CHAIRMAN, DELEGATION 1979 WORLD ADMINISTRATIVE RADIO CONFERENCE

Mr. Chairman, members of the Committee, it is a pleasure to be with you today to review U.S. preparations for the 1979 World Administrative Radio Conference.

This is an important conference, as you well know, Mr. Chairman. It will be the first ITU Conference in twenty years to consider virtually all uses of the radio spectrum, and the results of our meeting will probably have an effective lifetime of another twenty years. What this means is that we not only have to catch up with events of the past twenty years but forecast those of the next twenty.

These are challenging tasks. The world of electronic communications is greatly different today than what it was in 1959, and no doubt it will change as much in the next score years as it has in the past. The only certainty is that electronic communications will grow in importance both domestically and internationally.

The central role of information and communications in modern economies has been such as to induce some observers to describe the current era as an "information age". There are indeed impressive statistics to support that characterization. Econometric studies show that in the U.S., for example, as much as one-half of the GNP can be attributed to the collection, storage, manipulation and transmission of information. You do not have to trust the precise figure — which rests on some

Statistic accounting classifications — to accept the truth of the generalization: modern economies and modern societies in general are becoming increasingly dependent on information and communication.

Not all of this information and communication activity is, of course electronic. However, I do not think anyone here will seriously quarrel with my asserting that, in modern societies, both information and communication activities are now dominated by electronics. And to the extent that electronic information and communications becomes more centrally important to modern society, so indeed does the radio spectrum which is the central means by which electronic information is transmitted among peoples. There in a nutshell lies the importance of radio frequency management in general, and the 1979 WARC in particular. By regulating the use of the spectrum, the Conference can exert a powerful influence on the character of the flow of information both internationally and nationally.

At this point I should make the obvious point that, as with other international undertakings, we are bound by the work of the Conference only insofar as we submit to it. However, it must be borne in mind that the radio spectrum is an international resource which requires a measure of international agreement in order to be effectively used. As a nation that is not only a major user of the spectrum, but one which uses it worldwide, we have a strong interest in maintaining a working international consensus on how this resource will be utilized. This does not mean that all nations everywhere have to agree on exactly the same patterns of use. Many uses can be, and are, determined on a national or regional basis; however, in general it is useful to think

of the radio spectrum as a resource that requires some degree of international agreement. That is what WARC is about.

Against this background we have been preparing for the 1979 WARC with uncommon effort. A reporter for the British journal "Economist" recently noted that the U.S. was "preparing for WARC as for the Olympic Games". The analogy between WARC and the Olympic Games may not be entirely apt but the general chacterization is accurate. Certainly our preparatory efforts have been more elaborate than those for any previous WARC. They began some five years ago as a joint undertaking by the FCC, the predecessor to the present National Telecommunications and Information Administration (NTIA) and the State Department. Since that time virtually every major federal agency, as well as industry and public users too numerous to mention have actively participated in shaping U.S. requirements and U.S. proposals. Most of our proposals were submitted to the ITU, on schedule, at the end of January of this year. The remainder of our HF proposals were delayed pending internal resolution of a domestic contest over HF frequencies. These were submitted in April.

The development of proposals is, of course, only one part of the preparatory process. We have been actively developing detailed position papers evaluating alternatives and trade-offs in light of what we have learned of the views of other ITU members.

And we have been very active in exploring what those views are. I just returned from bilateral discussions in London, Paris and Algiers. Several of my colleagues on the team went on to Cairo. Other U.S. representatives are now in Latin America and one of my assistants will visit Belgrade later this month. Before this round of bilaterals we

met in Washington with Soviet representatives -- a follow up to earlier discussions in Moscow last year. Two weeks before that I was in the People's Republic of China discussing WARC; a week before that we held discussions with the Australians, Indonesians, Indians, and others in Asia and the Pacific. Before that were discussions in February and March in Africa and Latin America. This recent schedule -- which is all I have recounted -- is illustrative of a long term effort. For the past two and one-half years we have been engaged almost continuously in pre-Conference discussions on WARC, in all parts of the world.

Our pre-Conference discussions are now coming to a close. We anticipate one very important meeting of CRS countries in Bogota in July. However, from this point forward we will be focussing most of our energies on intensive evaluation of the proposals submitted by the different countries as well as the information obtained in our discussions and other information sources. I hope, however, we will continue after the Conference the kind of dialogue we have established in preparation for it. These discussions have provided a foundation for future cooperation in the field of telecommunications which will prove invaluable in the years to come.

Let me turn at this point to some of the main Conference issues. I shall not attempt to outline the specific proposals we are making. I will be happy to provide for the record a copy of those proposals or a narrative summary if the committee wishes. It might be useful, however, to summarize here the very broad objectives we seek to advance:

One, we seek to achieve international agreement on necessary, incremental changes in frequency allocations and related regulations

in order to enhance U.S. economic, social, and national security interests.

Two, we seek to maintain those procedures which provide maximum flexibility and adaptability to changing needs.

Three, we wish to strengthen the role of the ITU as the international organization responsible for implementing WARC decisions, while not adversely affecting the sovereign rights of the United States.

Four, we support changes in international allocations and related frequency management procedures which will accommodate the needs of other nations, consistent with our own essential requirements, while endeavoring to avoid or limit the impact of politically inspired efforts to impede fair and efficient use of the spectrum.

How well will we be able to secure our general objectives or our specific proposals? What do we foresee at the Conference? As might be expected, there are several schools of thought on the subject. One school envisions a reasonably smooth WARC along the traditional, technical pattern of such conferences -- one generally free of confrontational politics. At the opposite pole another school foresees a WARC fraught with political problems similar to those experienced at the Law of the Sea Conference or in some of the UNCTAD conferences. Adherents of this latter view envisage highly politicized, ideological confrontations -- essentially along "North-South" lines. One observer, in what can only be described as a spirit of verbal abandon, described WARC as the coming "Armageddon" of the New World Information Order debate. Such apocalyptic forecasts seem to me wildly exaggerated -- the product of over-active imagination and indiscriminant thinking.

A careful appraisal of the situation right now leads to an intermediate judgement about the probable outcomes of the Conference. Let me illustrate in specific terms what I think this implies:

First, I expect some considerable resistance to proposals which we have made for substantial increases in HF broadcast frequency allocations. The resistance will come mainly from developing countries which have continued need for other services which they fear would have to be sacrificed. We are attempting to show that the sacrifice would not be significant because of the possibility for sharing of frequencies but I have to concede that there is considerable skepticism about the feasibility of sharing. Among some nations there may also be political hostility to increasing allocations for HF broadcasting inasmuch as it is used primarily for international broadcasting, but I think this is a lesser concern for most countries and probably not the foremost obstacle to allocations changes.

Second, we will almost certainly encounter great controversy over U.S. proposals to satisfy increased requirements for satellite allocations. Here the problem is not uniquely one of conflict between developed and developing country needs; the larger problem is simply one of reconciling different demands for the spectrum — demands that are relatively independent of general geopolitical orientation. In fact, with respect to most of the specific allocations issues, the most apparent conflicts turn out to be among developed countries. At stake here are a variety of uses — e.g., broadcast, fixed, and mobile satellite services, solar power transmission, environmental sensing, radionavigation — to

name some of the prominent uses. In each service the U.S. has important proposals; some of them appear to have strong support, some have strong opposition.

Third, one of the most vexing problems that will confront us at the Conference will be the problem of trying to ensure the fair and equitable access by all nations to the spectrum and the geostationary orbit. This issue does have a distinctly North-South political orientation. We believe -- as do most other developed countries, and many developing countries as well -- that this can be assured through adherence to the present flexible procedures. However, a number of developing countries -- we cannot yet be certain how many -- believe otherwise and will insist on some form of more tangible guarantee of access. Proposals to provide such a guarantee will include establishment of allotment plans for the distribution of frequencies and orbital space slots on a country-by-country basis. Such plans have been proposed recently for two services - the HF broadcast service and the fixed satellite service.

Such proposals will have to be carefully and critically evaluated. While we endorse the principle of ensuring fair and reasonable access by all countries to the radio spectrum, we have in the past opposed allotment plans except in situations where such planning has been deemed essential to effective worldwide use. Our concern is a pragmatic one: allotment plans which distribute frequencies and orbital space to countries or areas in advance of the need do not allow optimal utilization of the spectrum; nor do they provide adequate incentives for adoption of spectrum and orbit-conserving technologies and patterns of use.

What kinds of compromises or trade-offs may be possible to meet developing country concerns will have to await the Conference. We are, however, continuing to consider, in consultation with many other developed and developing countries, all the different options that may be possible.

I should mention other, less specific areas of potential conflict. Some are associated with the so-called New World Information Order, which the developing countries perceive as a mechanism for redressing what they see as the developed countries' dominance of world communications.

In this regard we have followed with particular interest the various meetings of groups of the Non-Aligned Movement which have been endeavoring to work out a concerted strategy and proposals for the WARC. Although the details of possible common positions among the non-aligned are still missing, recent meetings of both non-aligned broadcasting and telecommunications organizations indicate an apparent consensus among some of the countries on some important subjects such as orbit planning, HF broadcast planning, allocations preferences for developing countries and some other matters. Although we would have difficulty with some of the proposals as I mentioned earlier, I am confident that we can constructively deal with them at the Conference if we can keep the discussion focussed on their specific merits and keep to a minimum the ideological politics and confrontational rhetoric that has characterized some of the North-South debates to date. Unfortunately several recent non-aligned meetings give evidence that at least some of the countries see WARC as an occasion for just such a debate and also pursuing political issues that properly have no place at the Conference. Recent meetings of different groups of non-aligned countries in Yaounde, Cameroon and Algiers are illustrative of the troublesome admixture of specific technical concerns with more general political polemics along the lines of discussions in UNESCO and elsewhere on the New World Information Order. Perhaps the most disturbing development in these two meetings

was the attempt in Yaounde to remove Egypt from the meeting -- a warning that the recent battle in the World Health Assembly over Israel's voting rights, and the location of a regional WHO office in Egypt, may carry over into WARC.

We are developing our positions to cope with all these issues as well as with the issues specifically on the agenda. We cannot pretend that we are able to predict precisely every contingency, but I can say that we have not yet been confronted with any surprises and I think we are in a posture to respond as appropriate to all matters which arise, whether or not they are specifically within the scope of the agenda. Our strategy for dealing with all of these shifting challenges will be as flexible as possible, consistent with protecting our essential interests. We obviously recognize that succeeding on some issues is more important than on certain others.

Last but of course not least in our preparations we have been busy perfecting the organization of the decision-making processes in Geneva and in Washington. Last month the Secretary of State approved a list of 64 nominees for the Delegation and it is scheduled to have its first meeting tomorrow. I think it is a well-balanced group, representative of the major federal government and private industry users as well as general public representatives. Almost all of them have been active as members of my Initial Delegation Group or as members of my Advisory Committee.

Many decisions logically will be made on-the-spot, under my direction; but we also will need experienced advisors here, to obtain the quick well-coordinated guidance we will require from Washington itself. We have identified a team of agency advisors; in addition we expect to have continuing contact with industry and public representatives.

Mr. Chairman, this completes my prepared testimony. I will be pleased to respond to any questions committee members may have.

Thank you.

Mr. FASCELL. Thank you very much.

Without objection, we will place in the record the list of the delegation as it is presently comprised and which will meet tomorrow for the first time.

Mr. ROBINSON. Yes, sir.

[The information referred to follows:]

U.S. DELEGATION TO THE WORLD ADMINISTRATIVE RADIO CONFERENCE, GENEVA, SEPTEMBER 24—NOVEMBER 30, 1979

Representative

Glen O. Robinson, Office of the Deputy Secretary of State, Department of State.

Alternate representatives

Wilson P. Dizard, International Communications Policy, Bureau of Economic and Business Affairs, Department of State.
Samuel E. Probst, Director, Spectrum Plans and Policies, National Telecommunications and Information Administration.
Kalmann Schaefer, Foreign Affairs Advisor, Federal Communications Commission.
Richard E. Shrum, International Communications Policy, Bureau of Economic and Business Affairs, Department of State.
William R. Torak, International and Operations Division, Office of Science and Technology, Federal Communications Commission.
Francis S. Urbany, Manager, International Communications, National Telecommunications and Information Administration.

Senior adviser

Hon. William vanden Heuvel, United States Mission, Geneva.

Advisers

Dexter Anderson, Telecommunications Attaché, United States Mission, Geneva.
Lewis Bradley, Spectrum Management Division, National Telecommunications and Information Administration.
Charles Breig, Office of the Bureau Chief, Broadcast Bureau, Federal Communications Commission.
Anna L. Case, Chief of the Frequency Division, Voice of America.
William J. Cook, Assistant to the Assistant Secretary of Defense, Department of Defense.
Anthony M. Corrado, Executive Secretary, Interdepartment Radio Advisory Committee, National Telecommunications and Information Administration.
Robert L. Cutts, Chief, International and Operations Division, Office of Science and Technology, Federal Communications Commission.
Harry A. Feigleson, Director, Electromagnetic Spectrum Management, United States Navy.
John Gilsenan, Policy and Rules Division, Private Radio Bureau, Federal Communications Commission.
Wendell Harris, Policy and Rules Division, Common Carrier Bureau, Federal Communications Commission.
Melvin L. Harrison, Office of International Communications Policy, Department of State.
Earl J. Holliman, Chief, Frequency Management Staff, United States Coast Guard.
Edward Jacobs, Chief, International Conference Staff, Office of Science and Technology, Federal Communications Commission.
George Jacobs, Director, Research and Engineering, Board for International Broadcasting.
Donald Jansky, Associate Administrator, National Telecommunications and Information Administration.
Raymond Johnson, Acting Chief, Spectrum Management Staff, Federal Aviation Administration.
Jay Kenneth Katsen, Office of International Communications Policy, Department of State.
Wayne Kay, Senior Policy Analyst, Office of Science and Technology Policy, White House.

Harold Kimball, Chief, Communications and Frequency Management, National Aeronautics and Space Administration.
Ronald Lepkowski, International and Satellite Branch, Common Carrier Bureau, Federal Communications Commission.
Stephen J. Lukasik, Chief Scientist, Federal Communications Commission.
William Luther, Chief, Engineering Division, Field Operations Bureau, Federal Communications Commission.
Robert May, Frequency Management Office, United States Air Force, Department of Defense.
Robert Mayher, Deputy Chief, Spectrum Engineering and Analysis Division, National Telecommunications and Information Administration.
Robert P. Moore, Head, Microwave Radiometry, United States Navy, Department of Defense.
Vernon I. McConnell, Frequency Manager, Department of Defense.
Neal McNaughten, Assistant Chief, Broadcast Bureau, Federal Communications Commission.
James E. Ogle, Director, Office of Radio Frequency Management, Department of Commerce.
Lawrence Palmer, International Conference Staff, Office of Science and Technology, Federal Communications Commission.
Richard Parlow, Acting Chief, Spectrum Engineering and Analysis Division, National Telecommunications and Information Administration.
Paul Phillips, Physical Scientist, Frequency Management, United States Army, Department of Defense.
Richard M. Price, Astronomy Research Section, National Science Foundation.
Thomas Tycz, International Conference Staff, Office of Science and Technology, Federal Communications Commission.
Arlan van Doorn, Deputy Chief, Private Radio Bureau, Federal Communications Commission.
Constantine Warvariv, Office of United Nations Educational, Scientific and Cultural Organization, Bureau of International Organization Affairs, Department of State.
Francis Williams, Chief, Treaty Branch, Office of Science and Technology, Federal Communications Commission.

Private sector advisers

Perry G. Ackerman, Manager, Systems Engineering Laboratory, Hughes Aircraft Co.
Ann Aldrich, Professor of Law, Cleveland State University Law School, Cleveland, Ohio.
George Bartlett, Vice President for Engineering, National Association of Broadcasters.
Herbert Blaker, Manager, Communications/Regulatory Policy, Rockwell International.
William Borman, Manager of Technical Programs, Motorola, Inc.
Nolan Bowie, Executive Director, Citizens Communications Center.
Charles Dorian, Director, Technical Planning, Comsat General Corp.
James A. Ebel, Chairman of the Satellite Transmission Committee, ABC, CBS & NBC Network Affiliates Association.
E. Merle Glunt, Consultant, American Radio Relay League.
Robert E. Greenquist, Assistant Vice President for Technical Policy and Standards, Western Union.
David Honig, Assistant Professor, Howard University.
Marion Hayes Hull, Associate Director, Booker T. Washington Foundation.
Karyl A. Irion, Systems Analyst, Systematics General Corp.
Eugene Jackson, President, National Black Network.
John J. Kelleher, Vice President, National Scientific Laboratories.
Sharon Nelson, Legislative Counsel, Consumers Union.
Edward Reinhart, Manager, CCIR and WARC Activities, Communications Satellites Corp.
Ronald Stowe, Assistant General Counsel, Satellite Business Systems.
Hans Weiss, Director, Systems Studies, Communications Satellite Corp.
H. E. Weppler, Engineering Director, American Telephone and Telegraph Co.

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Mr. FASCELL. Mr. Buchanan.

Mr. BUCHANAN. No questions, Mr. Chairman.

Mr. FASCELL. Mr. Pritchard.

Mr. PRITCHARD. I have a couple of questions.

The Group of 77, is there a distinct collection of the underdeveloped nations and is there a leader and is there a strategy forming among them?

Mr. ROBINSON. The G–77 group as such is not an active organization of the LDC's in this forum. It is rather the nonalined movement. Now there is an overlap between the nonalined movement and the G–77 group. There is extensive commonality of membership between the two groups but there are some differences. The G–77 group is much more active in the economic sector and the nonalinment movement is much more active in social, cultural, and communications areas.

The leaders in the one are not necessarily prominent in the other although some of the leaders are the same. Leaders of the nonalined movement include such countries as Yugoslavia, Algeria, India, Cuba. There are moderate voices and there are some immoderate voices.

Mr. PRITCHARD. Cuba is in the nonalined nations?

Mr. ROBINSON. Yes.

Mr. PRITCHARD. Nonalined with whom?

Mr. ROBINSON. Well, there are a lot of strange labels that are used in international politics, Mr. Pritchard. I don't think there is any formula by which they define themselves. Recently there was a conference at the nonalined movement in which they tried to throw out Egypt on the grounds that having signed a treaty with Israel, you could not possibly be nonalined. It was Cuba that tried to throw Egypt out. There are some that are more nonalined than others, let me put it that way.

Mr. PRITCHARD. Let me ask you this. This is very important to America and to Western world technology. As I view it, this would be a very important matter for the United States; of great importance to us and of great value to us to have this system. To get all out of whack would be a severe economic problem for us. These developing nations, how much do they have on the line and how much do they recognize it as being important? It seems to me when you are in a conference you are at a great disadvantage if the other people don't feel that they have very much on the line.

Mr. ROBINSON. I think they have quite a bit on the line. In a very real sense, some of the smaller countries in particular may have more on the line than we. Being a large country and somewhat isolated geographically, we are in a position to use the radio spectrum much more freely without constraints from neighboring countries than many of them so they have quite a bit on the line. Whether they perceive that is another question because you have this mixture of the technical people who do perceive it and the political people who probably do not perceive it, and every one of the delegations will have a mixture of both groups on their delegation we are quite certain. How the balance will work out, we don't know. That is one of the unknowns, but a lot of the Third World rhetoric is coming out of information ministries or broadcast organizations of the information ministers.

It is far more prevalent at least in those circles than it is in the spectrum management part.

Mr. PRITCHARD. Finally, how do you come to a decision in this sort of relation?

Mr. ROBINSON. You vote, You try for a consensus if you can—and some conferences are successfully concluded on the basis of a consensus—but I think in this one there is going to have to be quite a bit of voting and majority voting that will prevail. The country then that finds itself unable to accept the majority vote can take a reservation which is a decision not to be bound to a particular issue. We have only taken one such reservation in the history of the ITU.

Mr. PRITCHARD. You mean America has?

Mr. ROBINSON. America has, yes. In 1974 we recognized the necessity of keeping our options open. We may have to take reservations again but we would not like to do that because too many reservations in the whole system tend to bog it down.

Mr. PRITCHARD. How much of this reservation can go on without the system working?

Mr. ROBINSON. Well, it depends upon the kind of service you are talking about and what they take a reservation to. At some point it does break down. We have right now, for example, one of our biggest problems in the broadcasting area. The area I spoke of at length earlier is the fact that we have many countries operating in allocation bands and bands that are not allocated to broadcasting on the basis of a reservation which they took to the current allocation plan. The Soviet Union is one of them, and that causes all kinds of problems when they operate "out of band" we call it.

One of the things we are trying to achieve is to bring them in band, so to speak, so that their operations are more regularized. But there are a lot of countries that do take reservations or, at least if not a reservation, they take what they call a footnote allocation or a footnote provision which may make some special footnote provision for that country. There are a lot of those benefits and we will in fact resort to a lot of those to get our own requirements adopted without interfering with some other country.

Mr. PRITCHARD. Finally, what are the penalties? They don't want to play by the game? I am still allowed into the club and I get all the benefits. I can walk away from things I don't want, can't I?

Mr. ROBINSON. That is right. There are no sanctions in the sense of an international police force or really even removal from the union if you don't go along with the rules of the game. What is striking is that everyone does go along.

Mr. PRITCHARD. So far.

Mr. ROBINSON. So far. There are a few exceptions but by and large if you get the reputation for being a nonplayer, so to speak, you don't play by the rules of the game, there is a certain force to the weight of international opinion. You are not to be trusted in this forum. So I think for that reason everybody finds it in their interest to be part of the agreement and to live up to their agreements as near as they can.

Mr. PRITCHARD. I think you have a very difficult job ahead of you.

Mr. FASCELL. Mr. Robinson, just to qualify you in this position we will need a curriculum vitae in the record if you don't mind.

Mr. ROBINSON. Yes, certainly.[1]

Mr. FASCELL. Can you tell us just now some of your background, not too lengthy?

Mr. ROBINSON. It isn't too lengthy, there is not that much to tell. I accepted this job on a part-time basis in 1978. I was then and am now a professor of law at the University of Virginia whence I came from the Federal Communications Commission where for 2 years I was a Commissioner in 1974 to 1976. Prior to that time I was in practice here in Washington practicing, among other things, communications law. I have taught in and around the field of communications, administrative law, Government regulation since 1961. I suppose that is as close a qualification as I have for my present position.

I am embarrassed to say that I have no technical background as you probably discovered. My experience in foreign affairs is also rather modest, if not meager, so I come to this job with a fresh perspective on both counts.

Mr. FASCELL. Do you hold any governmental rank as a result of your appointment?

Mr. ROBINSON. I will hold the rank of ambassador at the Conference. That is a personal rank, it is extended only for a period of 6 months, so normally it does not come with the advice and consent of the Senate. For one reason or another that is the way the Department chose to handle it so I do not now enjoy that title except by occasional reference.

Mr. FASCELL. Will you have a full-time governmental counterpart with you at this conference?

Mr. ROBINSON. A full-time Government counterpart?

Mr. FASCELL. Yes. Will there be somebody from the Department of State, for example?

Mr. ROBINSON. There will be a lot of people from the Department of State.

Mr. FASCELL. Who is the highest ranking officer who will be with you?

Mr. ROBINSON. The highest ranking officer would be an FSIO. Mr. Wilson Dizard is in the back of the room; he is on loan, thanks to the ICA. He is a senior Foreign Service officer. Mr. Jay Katzen sitting next to him will also be on the delegation and one of my legal advisers here who has participated actively is Ms. Jean Bailly from the Office of the Legal Adviser.

There are several other Department of State officers on my delegation and two of them will serve as my deputies at the Conference.

Mr. FASCELL. Has there been any discussion of having a higher ranking officer from the State Department?

Mr. ROBINSON. Not to me there has not been.

Mr. FASCELL. You see no political problem in that?

Mr. ROBINSON. I don't. I am not sure what you mean by a political problem. You mean a political problem in not having experience?

Mr. FASCELL. Yes.

Mr. ROBINSON. No, I don't.

Mr. FASCELL. What is the experience?

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[1] See page 1.

Mr. ROBINSON. We have ample political experience on my delegation.

Mr. FASCELL. How are other delegations compared to us, both in size and makeup?

Mr. ROBINSON. Well, all of them are smaller. I think I can say without hesitation that they will all be smaller.

Mr. FASCELL. What kind of people head them up?

Mr. ROBINSON. For all developed countries the effective heads of delegation will be technical people. In a couple of cases they may have a titular head who is a deputy minister or something like that but this is not true worldwide. Almost all of these delegations are comprised of representatives first from the Ministry of Post and Telecommunications and then the various user agencies such as the civil aviation side, et cetera.

Mr. FASCELL. For example, who will head the Soviet delegation?

Mr. ROBINSON. The Deputy Minister of the Post and Telecommunications, an engineer. The Chinese delegation will be headed probably by the Deputy Minister from the Ministry of Post and Telecommunications.

Mr. FASCELL. Do you think there is any political connotation to the fact that Deputy Ministers have been appointed even as titular heads of these delegations?

Mr. ROBINSON. Well, in the Soviet case he would be much more than the titular head. Don't misunderstand. The Deputy Minister would actually be about the third ranking, not the second ranking. He would be comparable to an Assistant Secretary but that is essentially the rank I hold.

In most cases the rank is considerably below that. In the case of the United Kingdom, for example, the highest ranking officer I think is considerably below that.

Mr. FASCELL. Who picked the U.S. delegation?

Mr. ROBINSON. Well, I made the recommendation based upon recommendations submitted to me. The accrediting bureau is the International Organizations Bureau. Of course, the Secretary of State signed off on it.

Mr. FASCELL. For operational purposes it was cleared through IO?

Mr. ROBINSON. Yes, it was cleared through IO and there is an IO representative on it. Mr. Warvariv is their representative.

Mr. FASCELL. Now how about other interested agencies in the U.S. Government? Are they all on this delegation as a kind of resource?

Mr. ROBINSON. Well, some of the "interested" agencies think they are not and should be but I would say that all the major agencies are, yes.

Mr. FASCELL. For example, is BIB on the delegation?

Mr. ROBINSON. BIB is on.

Mr. FASCELL. VOA?

Mr. ROBINSON. Yes.

Mr. FASCELL. OK. Who else?

Mr. ROBINSON. Coast Guard, FAA.

Mr. FASCELL. Military?

Mr. ROBINSON. Military, oh, yes.

Mr. FASCELL. Who is complaining about not being adequately represented?

Mr. ROBINSON. I would say that several of the agencies think they ought to have additional people and I intended to revise that. I cannot honestly say offhand that I know of any agency that has no representation at all.

Mr. FASCELL. They just want more votes on the delegation, you mean?

Mr. ROBINSON. They want more people.

Mr. FASCELL. That is the same thing.

Mr. ROBINSON. We don't put things to a vote necessarily.

Mr. FASCELL. You are going to run it?

Mr. ROBINSON. I am going to run it.

Mr. PRITCHARD. Good.

Mr. FASCELL. I was going to say that is the most encouraging thing I have heard yet.

Mr. ROBINSON. Well, all I have to do is convince them.

Mr. FASCELL. Good luck.

Have the congressional people been appointed yet?

Mr. ROBINSON. No, sir, they have not. The letters went out, I think, a week ago so I would hope that within a month or so we would have some idea.

Mr. FASCELL. They have gone to the Speaker of the House and the President of the Senate?

Mr. ROBINSON. Yes.

Mr. PRITCHARD. How many congressional people?

Mr. ROBINSON. Four from each side.

Mr. FASCELL. I assume, of course, that when you get through with this mish-mash that you are going to go back to doing whatever you were doing.

Mr. ROBINSON. Yes, sir, I have no other plans. I am on leave of absence from the University of Virginia and I resume my teaching after the conference, so I think it will be a welcome change.

Mr. FASCELL. Is there any consideration being given to this, besides debriefing, after the Conference and of course the results will be publicly known?

Mr. ROBINSON. Yes.

Mr. FASCELL. Is there any thought being given to any kind of a post-conference action by this delegation with respect to recommendations for the future?

Mr. ROBINSON. One of the agenda items on the Conference agenda is planning for future Conferences. There will be many specialized Conferences over the next 5 years at least. We already have a Conference scheduled in 1980, one scheduled in 1982 and one scheduled in 1983. We will undoubtedly have a couple of others scheduled at the Conference itself. These are specialized conferences which deal with particular services, for example, or particular types of plans.

Mr. FASCELL. Do you think it will be worthwhile for the delegation to contemplate some recommendation of the U.S. Government subsequent to the Conference or do you see that as beyond the scope of our charter or responsibility?

Mr. ROBINSON. No, it is not beyond the scope of my charter but I think I would have to wait and see what the outcome of the Conference was.

Mr. FASCELL. See, one of the things that troubles us, Mr. Robinson, is the fact this whole arrangement in terms of telecommunications needs in the United States has always been ad hoc. After this Conference, everyone will go back to his or her respective responsibilities and to the agencies or the private sector. When we start getting ready for the next specialized conference, whenever that is, you may not have anything to do with it.

Mr. ROBINSON. Well, whether I have anything to do with it or not, I think it is a fair assumption that I will not, at least as an active participant. You must recognize that a large number of these people really are permanent international radio specialists. This is their job day in and day out. They bring the continuity with them to this Conference and they will take it into the next Conference.

Mr. FASCELL. Is there an interagency——

Mr. ROBINSON. There is an interagency group that functions to coordinate the domestic and the international requirements and it has been going on for a long time.

Mr. FASCELL. That is permanent?

Mr. ROBINSON. That is permanent.

Mr. FASCELL. Who chairs that?

Mr. ROBINSON. The NTIA chairs it. It is called the IRAC, the Interdepartment Radio Advisory Committee.

Mr. FASCELL. And Commerce chairs it?

Mr. ROBINSON. Yes, the NTIA within the Commerce Department chairs that group and it consists of representatives from all of the different spectrum users, including the FCC. The FCC has a somewhat unusual status because, of course, the FCC has autonomy from the rest of the executive branch. The FCC is in charge of all the private sectors, but it coordinates with the Federal Government side which is handled by the NTIA and all of the different agencies' requirements are coordinated through this IRAC mechanism. It is quite an elaborate mechanism. It has been going on for 50 years that it has been in place.

Mr. FASCELL. Now with respect to representation on this delegation, what about women and minorities?

Mr. ROBINSON. We have a fair representation of women and minorities. I won't pretend it has been easy to find a lot of women and minorities in this particular area, it is a highly specialized one. Finding people who are well acquainted and experienced either with the engineering or the political aspects is quite difficult but we do have what I consider to be a fair showing on that count.

Mr. FASCELL. Well, on this continuity question, you know, it kept coming up constantly in the U.S. Government. For example, the head of the Soviet delegation has been at this for 30 years and he has been at every conference. I don't know whether that is desirable or not desirable but the Soviets are not trusting to ad hoc corporate memory.

Mr. ROBINSON. Well, there are some advantages, unquestionably. It is nice to have people whose memory goes back to 1959, although we do have that kind of institutional memory also. Several of our members have extensive prior experience going back many years. In the back of the room is Mr. George Jacobs who was with the 1959 Conference. He represents BIB. We have that kind of institutional

memory albeit not at the head of the delegation level. I would say, however, that that will be very unusual at this Conference.

I think that you will find, in fact, that many of the delegations are young as ours is young—young in experience, young in age. We think what we are doing here, in fact, is identifying a cadre of people who will continue to be at this business—not necessarily me but the others who are permanent Government employees—for many years to come. So I think we are building an institutional memory, and in any case I am quite satisfied that we have the adequate experience.

Mr. FASCELL. What agency is responsible for your logistical support?

Mr. ROBINSON. In the Department of State, the Office of International Conferences within the IO Bureau takes care of the logistical support, but a lot of the support is also provided by the agencies themselves. For example, the FCC and the NTIA and the Defense Department all contribute staff to help support us; they also contribute computers.

Mr. FASCELL. I meant with respect to the normal housekeeping problems.

Mr. ROBINSON. That is all being handled with the IO in the Department of State.

Mr. FASCELL. Who is going to be responsible for all your administrative problems with this large delegation? I know you are but I mean——

Mr. ROBINSON. We have a representative from the Office of International Conferences who will be an administrative officer and he in turn will report to Mr. Dizard whom I pointed out a moment ago and thence to me. We also have on my personal staff some administrative assistants.

Mr. FASCELL. Mr. Buchanan.

Mr. BUCHANAN. Would you indicate the reason for the size of the American delegation? We tend to have such large delegations in such matters.

Mr. ROBINSON. Well, there are several reasons for it, Mr. Buchanan. Let me be frank. One of the reasons is purely political. We have such a variety of interests that need to be represented just to insure a representational balance, but setting that aside we also probably are the largest user of the radio spectrum in the world. We have more and more diversified uses than any country that I can imagine. Our proposals are very extensive and very complicated and we tend to pride ourselves on having a specialist, an expert, answerable to every facet of those proposals over and above the political and the administrative representatives.

So actually the surprise perhaps is not that the number is now 64 but that the number is not 100. In 1959 we had a delegation of nearly twice what we now have. I think, in fact, it was over 120 people in 1959.

Mr. FASCELL. Your industry representatives, do they come from American-owned corporations?

Mr. ROBINSON. Well, I can't say that they are 100 percent American owned because I don't know what the stockholdings of Hughes Aircraft is but, yes, they are all American corporations in common parlance.

Mr. FASCELL. You don't think we would have a problem with American subsidiaries of a foreign-controlled corporation?

Mr. ROBINSON. No.

Mr. FASCELL. What about security at this Conference for the American delegation?

Mr. ROBINSON. It will be a problem. We are going to have to bring in an awful lot of people, make sure that they understand security rules, because all our position papers are classified, of course. We are fortunate in being able to secure the facilities occupied by the MTN delegation in the Botanical Building in Geneva. They are right below the room used by the SALT negotiators and there is good security there. I think the biggest problem might be back here because, as we move toward the Conference and we start shifting position papers around and start opening up the discussion, it is sometimes difficult to contain information. We are mindful of that problem in light of past experience.

Mr. FASCELL. Now you have identified the U.S. backup group for this Conference. Is that going to be a formal arrangement or just an individual identified in each of the respective agencies?

Mr. ROBINSON. Well, it is formal to the extent that those individuals have been tasked in those agencies, they know that they are tasked. There is a coordinator for the head of that group in the State Department.

Mr. FASCELL. So State is going to have to share the responsibility of the backup group?

Mr. ROBINSON. That is right, in terms of chairing it and coordinating it.

Mr. FASCELL. Now the work at WARC, is that all plenary?

Mr. ROBINSON. No, very little of it is plenary. We will quickly break down into committees and then into working groups. That is the only way the work gets done.

Mr. FASCELL. Do we have any idea now what the committees will be?

Mr. ROBINSON. Yes, there is some continuing debate. Of course, the final decision on the committee structure won't be made until the opening of the Conference, but we anticipate seven major committees and each of those or most of those will be broken down. There are three or four major important substantive committees; the rest are things like budget, credentials, steering, editorial, things of that character. The major committees are——

Mr. FASCELL. Could we have for the record the names of the seven committees on which there seems to be some consensus? You can do that later, you don't have to do it right now.

[The information referred to follows:]

PROPOSED CONFERENCE COMMITTEES

(1) Steering, (2) Credentials, (3) Budget, (4) Technical, (5) Allocations, (6) Regulations, and (7) Editorial.

Mr. FASCELL. Is there any substantive dispute with respect to the committee structure?

Mr. ROBINSON. There may be. There may be a bit of a political problem. This relates back to the question of the delegation size.

Many of the delegations, of course, will be very, very small from the developing countries and they are concerned that a large committee structure—that is, a large array of committees and subcommittees and working groups—will disadvantage them.

Mr. FASCELL. You cannot cover them all.

Mr. ROBINSON. You cannot cover them all which is one reason we have 64 people just to cover all those committees and we are sympathetic to that. On the other hand, you have the problem that you cannot work as a committee of the whole. There will be 1,500 delegates.

Mr. FASCELL. We are finding that out in Congress.

Mr. ROBINSON. There will be more people there than in Congress. There are going to be about 1,400 to 1,500 of them so you can imagine what an army of people, what a babble of voices it is going to be.

Mr. FASCELL. What country is chairing the Conference?

Mr. ROBINSON. We don't know that but the current leading choice would be New Zealand, a gentleman from New Zealand. He is the odds-on favorite as chairman.

Mr. FASCELL. Is that the first job of the Conference or is that done ahead of time?

Mr. ROBINSON. The first job of the Conference will be to vote on a slate—chairman, vice chairman, chairman of the principal committee, and chairman of the principal committees.

Mr. FASCELL. Is there an accreditation process for the delegation?

Mr. ROBINSON. There is an accreditation in the Credentials Committee and we anticipate some political problems may arise.

Mr. FASCELL. Has the Credentials Committee been named?

Mr. ROBINSON. No. We have a Credentials Committee, yes. The head of our Credentials Committee is Mr. Katzen back there.

Mr. FASCELL. How is the WARC Credentials Committee selected and how is it established?

Mr. ROBINSON. The Credentials Committee will be chaired by whoever the Conference votes on in the early days of the Conference.

Mr. FASCELL. So the Conference will have to meet in plenary session to establish the Credentials Committee?

Mr. ROBINSON. Yes; that is right, and then everybody sends their own delegates to that committee.

Mr. FASCELL. What do you see as the problem there?

Mr. ROBINSON. You may be aware of the recent episode with the World Health Organization and the effort to——

Mr. FASCELL. Unseat Israel?

Mr. ROBINSON. Unseat Israel and take the regional office out of Egypt.

Mr. FASCELL. I think it would be naive of us to pretend that that could not happen.

Mr. ROBINSON. We do see some differences between WHO and the ITU in terms of the role politics might play but we would just be whistling in the dark if we——

Mr. FASCELL. So it is entirely possible you could have a political problem right off the bat?

Mr. ROBINSON. Yes.

Mr. FASCELL. The first issue.

Mr. ROBINSON. Yes.

Mr. FASCELL. Before you ever get to the technical aspects of the Conference.

Mr. ROBINSON. Yes. We hope it would be bottled up in the Credentials Committee to allow the other work to go on but, yes, it could have a very explosive effect if it involves a prolonged fight. If it is just a kind of a pro forma gesture, that can quickly be snuffed out.

Mr. FASCELL. If somebody wants to spill it over to the floor of the plenary, you have got yourself a problem.

Mr. ROBINSON. Yes.

Mr. FASCELL. You might not ever get to the technical conference?

Mr. ROBINSON. I think we will get to it but you cannot be diverted too much. Ten weeks is not that much time to get the main work of the Conference done.

Mr. FASCELL. Let's talk about some other political problems. You have mentioned the discussion of the concept of international ownership of space as against the sovereign air space. Is anybody making a claim for sovereign air space?

Mr. ROBINSON. Yes. Colombia will be the leading proponent for establishing sovereignty rights to the geostationary arc but it will be supported by Ecuador and some of the other equatorial countries.

Mr. FASCELL. So we have a rehash of the 200-mile limit.

Mr. ROBINSON. Yes. It is a very old debate and it is a very tired debate.

Mr. FASCELL. So is the 200-mile limit.

Mr. ROBINSON. But this one also has another forum in which it is being actively debated, so we have a good and I think probably a sufficient response to it, which is that the U.N. Outer Space Committee is already dealing with that. That has come up in several preparatory committee meetings that we have had. Colombia has always made this point and everybody has listened politely and not applauded and it has pretty much been set to one side. I do not think that that proposal, because it does not have much political support, is likely to be a troublesome one.

Mr. FASCELL. Could you give us for the record a short sketch of the curriculum vitae of the delegation members?

Mr. ROBINSON. Yes.

Mr. FASCELL. Why these people were selected. It does not have to be lengthy.

[The information referred to follows:]

Biographies of Members of the U.S. Delegation to the 1979 World Administrative Radio Conference

ACKERMAN, Perry

Manager, Systems Engineering Laboratory, Hughes Aircraft. Holds BSME from Univ. of Michigan. ITU experience: Observer at 1977 Broadcasting Satellite Conference; active in CCIR Study Groups. WARC-79 participation: Delegate to 1978 SPM; Sydney Seminar; bilateral discussions; member of WARC Advisory Committee.

ALDRICH, Ann

Professor of Law, Cleveland State University. Holds BA from Columbia University and LLB, LLM, and JD from New York U. School of Law. Served 9 years as staff attorney, FCC's Office of General Counsel. ITU experience: Delegate to 1959 General WARC.

ANDERSON, Dexter

Telecommunications Attache, U.S. Mission, Geneva. Graduate of Yale and George Washington Univ. Foreign Service Officer with overseas assignments in Africa, Europe, and USSR. ITU experience: Delegate to 1974 Maritime and 1977 Broadcasting Satellite Conferences; Vice Chairman, USDEL, to 1978 Aeronautical Conference; Delegate to 1978 and 1979 Sessions of the Administrative Council. WARC-79 participation: Delegate to 1978 SPM; bilateral discussions. Delegate to numerous CITEL meetings. Formerly Staff Officer, Office of International Communications Policy, Dept. of State.

BARTLETT, George

Vice President for Engineering, National Association of Broadcasters. Graduate of Mass. Radio Institute, Boston, Mass. Holds BSEE from Brown University. Served 9 years as chief engineer of WDNC, Durham, N.C., 3 yrs as inspector for FCC. Also served in engineering capacity in private industry. Employed by NAB since 1954; appointed V.P. in 1965. Member of European Broadcasting Union. Officer of the Asia Pacific Broadcasting Union. ITU experience: Active in CCIR Study Groups. WARC-79 participation: Delegate to 1978 SPM; member of WARC Advisory Committee.

BLAKER, Herbert T.

Manager, Standards and Certification, Rockwell International. Employed by Pan American World Airways, 1937-59. Participated in numerous meetings of International Civil Aviation Organization. Served as International Air Transport Association spokesman at Fourth Inter-American Radio Conference, 1949. ITU experience: Delegate to 1974 Maritime and 1978 Aeronautical Conferences; active in CCIR Study Groups; Chairman, U.S. CCIR Study Group 8. WARC-79 participation: Delegate to 1978 SPM; member of WARC Advisory Committee.

BORMAN, William

Technical Director, Motorola, Inc. Holds BSEE from Fournier Institute of Technology and MSEE from Illinois University. Served as Chairman, Land Mobile Services Group's Committee in International Allocations and Agreements. Member of NTIA's Frequency Management Advisory Council. ITU experience: Active in CCIR Study Groups. WARC-79 participation: Delegate to 1978 SPM; Nairobi Seminar; bilateral discussions; member of WARC Advisory Committee.

BOWIE Nolan

Executive Director, Citizens Communication Center. Holds AA from Los Angeles Harbor College, BA from Cal. State Univ. at Long Beach and JD from Univ. of Michigan Law School. WARC-79 participation: Member of WARC Advisory Committee.

BRADLEY, Lewis

Staff member, Spectrum Management Division, NTIA. Holds BSEE from Texas A&M and degree in Military Science from Univ. of Maryland. Former U.S. Air Force Officer. Convenor of IRAC Ad Hoc 144-Ic. WARC-79 participation: Sydney Seminar; bilateral discussions. Member, NATO/ARFA.

BREIG, Charles

Electronics Engineer, Office of Chief of Broadcast Bureau, FCC. Holds BSEE from Pennsylvania State University. ITU experience: Delegate to 1977 Broadcasting Satellite Conference; active in CCIR Study Groups. WARC-79 participation: Delegate to 1978 SPM.

CASE, Anna

Chief, Frequency Division, Voice of America. Holds BSEE from LSU and MS from George Washington Univ. Member of IRAC. Has represented VOA on International Frequency Coordination Committee for HF broadcasting since 1964. U.S. Army Signal Corps experience. Formerly employed by Radio Free Europe. WARC-79 participation: Nairobi and Sydney Seminars; bilateral discussions.

COOK, William

Assistant to Asst. Secretary for Communications Command and Control, Dept. of Defense. Holds BSEE from Drexel Univ. and MS from George Washington Univ. Formerly employed by Philco and Dept. of Navy, Electronic Systems Command. WARC-79 participation: Delegate to 1978 SPM; Sydney Seminar, bilateral discussions. Participated in NATO/ARFA.

CORRADO, Anthony

Chief, Frequency Assignment and Interdepartment Radio Advisory Committee Administration Division, NTIA. Executive Secretary, IRAC. ITU experience: Involved in preparatory work for 1974 Maritime Conference; assisted ITU with introduction of computer techniques into the International Frequency Registration Board.

CUTTS, Robert

Chief, International and Operations Divison, FCC. Holds BSEE from U.S. Naval Academy and MPA from Indiana Univ. Former U.S. Navy Officer. FCC Liaison representative to IRAC. ITU experience: Participated in preparations for 1967 Maritime and 1971 Space Conferences.

DIZARD, Wilson

Vice Chairman, U.S. WARC Delegation. WARC Staff Director, Office of International Communications Policy, Dept. of State. Holds BS from Fordham College. Foreign Service Information Officer with overseas assignments in Turkey, Greece, Iran, Pakistan, Poland and Viet Nam. Assistant Dep. Director, U.S. Information Agency, 1966-67. Executive Director, White House Working Group on Communications Satellite Earth Stations, 1966. Executive Director, White House Working Group on Communications Satellite Applications, 1966-67. Attended INTELSAT Conferences, 1968-69.

DORIAN, Charles

Director, Technical Planning, Communications Satellite Corporation. Graduate of U.S. Coast Guard Academy. Served 30 yrs. with Coast Guard. Chief of C.G. Communications 1964-67. Dep. Director, Office of Telecommunications, Dept. of Transportation. ITU experience: Delegate to 1959 General and 1974 Maritime Conferences; Delegate to 1971 Special Joint Meeting; active in CCIR Study Groups. WARC-79 participation: Delegate to 1978 SPM; member of WARC Advisory Committee. Participated in numerous IMCO meetings.

EBEL, A. James

Chairman, Satellite Transmission Committee, ABC, CBS and NBC Network Affiliates. Holds BA from Iowa State Teachers College, BA from Univ. of Iowa and MSEE from Univ. of Illinois. Member of NTIA's Frequency Management Advisory Council. ITU experience: Delegate to 1971 Space and 1977 Broadcasting Satellite Conferences. WARC-79 participation: Member of WARC Advisory Committee. Presently Manager of KOLN-TV, Lincoln, Nebraska.

PEIGLESON, Harry

Director, Electromagnetic Spectrum Management, U.S. Navy. Holds BSEE from U.S. Coast Guard Academy and ME from American University. Navy representative to IRAC. ITU experience: Delegate to 1967 Maritime Conference; participated in preparations for 1971 Space Conference; active in CCIR Study Groups. WARC-79 participation: bilateral discussions.

GILSENAN, John

Electronics Engineer, Private Radio Bureau, FCC. Holds a BEE degree from Manhattan College and an M.S. from George Washington University. Air Defense Office with the U.S. Marine Corps 1962-65. Joined FCC in 1970. ITU experience: Active in CCIR; U.S. representative to Study Group 8 working group on maritime satellites. WARC-79 participation: Nairobi Seminar; bilateral discussions. Delegate to INMARSAT meetings.

GLUNT, E. Merle

Consultant, American Radio Relay League. Graduate of U.S. Navy Radio and Communications School. Attended George Washington Univ. and Capitol Radio Engineering Institute. Employed by FCC, 1940-45 and 1952-74. Retired from FCC as Asst. Chief, Treaty Branch (1974). Participated in IRAC for 30 yrs. Under AID contract in 1966 to develop plan to reorganize PTT of Thailand. ITU experience: Delegate to 1974 Maritime and 1973 Plenipotentiary Conferences. WARC-79 participation: Delegate to 1978 SPM; member of WARC Advisory Committee.

GREENQUIST, Robert E.

Assistant Vice President (Technical Policy and Standards), Western Union Telegraph Co. Holds BSEE from Cornell Univ. Continuously employed by Western Union since 1948. Served as Director of Westar System Engineering, 1970-74; Deputy Program Manager, 1974-75; and Assistant Program Manager, Engineering, 1976-78. Served on Joint Technical Advisory Committee and ad hoc FCC Advisory Committees. ITU experience: Active in CCIR Study Groups. WARC-79 participation: Delegate to 1978 SPM.

HARRIS, Wendell

Electronics Engineer, Policy and Rules Division, Common Carrier Bureau, FCC. Holds BSEE from Howard Univ. Member of IEEE. ITU experience: Active in CCIR. WARC-79 participation: Delegate to 1978 SPM; Nairobi Seminar.

HARRISON, Melvin

Foreign Affairs Adviser, Office of International Communications Policy, Dept. of State. Holds BA from Univ. of Maryland; attended American Univ. Graduate School. Foreign Service Officer who has served in Quito, Ecuador, and Saigon, Viet Nam. WARC-79 participation: Panama Seminar; bilateral discussions. Participated in several CITEL meetings.

HOLLIMAN, Earl

Chief, Frequency Management Staff, U.S. Coast Guard. Holds BSEE from Texas A&M. 40 yrs. experience in maritime communication system design and spectrum planning. Coast Guard representative to IRAC. ITU experience: Delegate to 1959 General WARC; participated in preparations for HF Broadcasting and Maritime Conferences; active in CCIR Study Groups. WARC-79 participation: Delegate to 1978 SPM.

HONIG, David

Assistant Professor, Howard University. Also Research Director, Black Media Coalition. Holds BA from Oberlin College and MA from Univ. of Rochester. Participated in several Congressional hearings on communications industry structure. Has also served on several FCC Advisory Committees. WARC-79 participation: Member of WARC Advisory Committee.

HULL, Marion Hayes

Director of Telecommunications Programs, Booker T. Washington Foundation. Holds BA, Long Island Univ. and MA, New York Univ. Has been employed as researcher and editorial assistant in publishing industry; college professor specializing in broadcasting and journalism; and as communications specialist for Dept. of Justice. Has worked for Booker T. Washington Foundation since 1973. Member of numerous public service, civic and professional organizations. WARC-79 participation: Member of WARC Advisory Committee.

IRION, Karyl

Systems Analyst, Systematics General Corporation. Holds BS from Duke Univ. ITU experience: Active in CCIR. WARC-79 participation: Delegate to 1978 SPM; member of WARC Advisory Committee.

JACKSON, Eugene

President, National Black Network. BSEE, Univ. of Missouri; MS in business, Columbia Univ. Worked previously as industrial engineer for Colgate Palmolive Company; as project coordinator for Black Economic Union; and as Director, Major Industries Program, Interracial Council for Business Opportunity. With National Black Network since its founding in 1972. WARC-79 participation: Member of WARC Advisory Committee.

JACOBS, Edward

Chief, International Conference Staff, FCC. Holds BSEE from Johns Hopkins Univ. ITU experience: Delegate to 1977 Broadcasting Satellite Conference; active in CCIR. WARC-79 participation: Panama Seminar; bilateral discussions. Delegate to numerous CITEL meetings.

JACOBS, George

Director, Research and Engineering, Board for International Broadcasting. Holds BSEE from Pratt Institute and MSEE from Univ. of Maryland. Joined Voice of America in 1949; BIB in 1976. Member of IEEE. Charter life member of Amateur Radio Relay League. Licensed radio amateur (W3ASK). ITU experience: Delegate to 1959 General and 1963 Space Conferences; Delegate to 1966 CCIR XIth Plenary Assembly and 1971 Special Joint Meeting; active in CCIR Study Groups. WARC-79 participation: Member of WARC Advisory Committee.

JANSKY, Donald

Associate Administrator, NTIA. Holds BA in Engineering Science from Dartmouth College; BEE from Thayer School of Engineering; and MSE from Johns Hopkins Univ. ITU experience: Delegate to 1971 Space and 1977 Broadcasting Satellite Conferences; Delegate to 1971 Special Joint Meeting; active in CCIR Study Groups; U.S. Representative to Working Group on Orbit Spectrum Utilization of CCIR. WARC-79 participation: Delegate to 1978 SPM. Delegate to numerous CITEL meetings.

JOHNSON, Raymond

Chief, Spectrum Management Staff, U.S. representative to International Civil Aviation Organization for planning studies. FAA representative to IRAC. WARC-79 participation: Delegate to 1978 SPM. Delegate to numerous ICAO meetings.

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KATZEN, Jay

Political advisor, U.S. WARC Delegation. Presently in Office of International Communications Policy, Dept. of State. Holds BA from Princeton and MA from Yale. Foreign Service Officer who has served as political officer in Leopoldville (now Kinshasa, Zaire); Deputy Chief of Mission in Bamako, Mali; economic officer in Bucharest, Romania; and Charge d'Affaires in Brazzaville, Congo. Served as political advisor, U.S. Mission to the UN, 1973-77. WARC-79 participation: Nairobi Seminar.

KAY, Wayne

Senior Policy Analyst, Office of Science and Technology Policy, White House. Colonel, U.S. Air Force. Holds BS from Wisconsin State Univ. and MS from Univ. of Maryland. WARC-79 participation: Nairobi and Panama Seminars.

KELLEHER, John

Vice President, Systematics General Corporation. Graduate of U.S. Army Signal Corps Radio School and numerous other professional and managerial training programs. Employed by Systematics General since 1969. Previously with NASA, 1962-69; Office of Chief Signal Officer, 1943-62; and Signal Corps Laboratories, 1940-43. Member of IEEE. ITU experience: Delegate to 1963 Space, 1971 Space and 1977 Broadcasting Satellite Conferences; Delegate to 1966 CCIR XIth and 1970 XIIth Plenary Assemblies and Special Joint Meeting; active in CCIR Study Groups; Chairman, U.S. CCIR Study Group 4. WARC-79 participation: Delegate to 1978 SPM; Sydney Seminar; bilateral discussions; member of WARC Advisory Committee.

KIMBALL, Harold

Chief, Communications and Frequency Management, NASA. Holds BSEE from Wayne St. Univ. and MSEE from Univ. of Illinois. Served with U.S. Air Force. Convenor of IRAC Ad Hoc 144-Id. ITU experience: Delegate to 1978 CCIR XIVth Plenary Assembly; active in CCIR Study Groups; Chairman of U.S. CCIR Study Group 2. WARC-79 participation: Delegate to 1978 SPM; Nairobi and Sydney Seminars, bilateral discussions.

LEPKOWSKI, Ronald

Supervisor, International and Satellite Branch, Common Carrier Bureau, FCC. Holds BSEE from MIT and MS from George Washington Univ. Employed by FCC since 1969. ITU experience: Delegate to 1977 Broadcasting Satellite Conference. WARC-79 participation: Delegate to 1978 SPM.

LUKASIK, Stephen J.

Chief Scientist, FCC. Holds BS from Rennsselaer Polytechnic Institute, and MS and PHd from MIT. Private experience with Westinghouse (1955-57) and Xerox Corporation (1974-76). Also held teaching positions with MIT (1951-55) and Stevens Institute of Technology (1957-66). Served as Director, Defense Department's Advanced Research Projects Agency (1971-74); and Senior Vice President, subsequently Chief Scientist, Rand Corporation (1977-79). Joined FCC as Chief Scientist in May 1979.

LUTHER, William A.

Chief, Engineering Division, Field Operations Bureau, FCC. Holds BSEE and MSEE from Drexel Univ. Employed by FCC since 1959. ITU experience: Active in CCIR Study Groups since 1968. WARC-79 participation: Delegate to 1978 SPM.

McCONNELL, Vernon J.

Frequency Manager, Department of Defense. Attended Los Angeles Trade-Technical College, 1948-51. Served as Marine Radio Officer. Serves as Chairman, Joint Frequency Panel's Permanent Working Group on Space Frequency Matters. Specializes in Radio Regulations dealing with satellite coordination procedures. ITU experience: Has participated in conference preparation since 1958. Participated in numerous NATO/ARFA meetings.

McNAUGHTEN, Neal K.

Assistant Chief, Broadcast Bureau, FCC. Employed with International Division, FCC, 1940-48. Served as Director for Engineering, National Association of Broadcasters; Manager of Market Planning, RCA; and Vice President, Ampex Corp. Returned to FCC in 1961. ITU experience: Vice Chairman, USDEL, 1977 Broadcasting Satellite Conference; delegate to 1978 CCIR XIVth Plenary Assembly; active in CCIR Study Groups; Chairman, U.S. CCIR Study Groups 10 and 11. WARC-79 participation: Panama Seminar. Attended numerous CITEL meetings.

MAY, Robert

Frequency Manager, U.S. Air Force. Holds BSEE and MBA from Univ. of Michigan. Formerly systems engineer for aerospace industry, 1945-64; government service in operations research, 1964-69. Air Force representative to IRAC. WARC-79 participation: Nairobi Seminar; bilateral discussions. Has attended numerous NATO/ARFA meetings.

MAYHER, Robert

Deputy Chief, Spectrum Engineering and Analysis Division, NTIA. Holds BSEE from MIT. ITU experience: Active in CCIR Study Groups since 1974; Chairman of International Working Party 1/2. WARC participation: Delegate to 1978 SPM; Panama Seminar; bilateral discussions.

MOORE, Robert

Physical Scientist with Microwave Radiometric Branch, Naval Weapons Center, Corona, CA. Employed as consultant on command, control and communications, Office of Chief of Naval Operations, U.S. Navy. Holds BS and MS from Univ. of Michigan. ITU experience: Active in CCIR Study Groups. Also participated in number of NATO study and advisory groups on millimeter wave matters.

NELSON, Sharon

Legislative Counsel, Consumers Union. Former staff member, U.S. Senate Committee on Commerce, Science, and Transportation. WARC-79 participation: Member of WARC Advisory Committee.

OGLE, James

Director, Office of Frequency Management, Department of Commerce. Commerce representative to IRAC. Former delegate to NATO/ARFA. Former Chief, U.S. Air Force Frequency Management Office. ITU experience: Delegate to 1959 General, 1971 Space, 1974 Maritime and 1973 Plenipotentiary Conferences.

PALMER, Lawrence M.

Communications Specialist, International Conference Staff, FCC. Holds BS from George Washington Univ. Served in U.S. Navy and specialized in communications field. Employed by U.S. Navy Frequency Management Office before joining FCC. ITU experience: Delegate to 1974 Maritime and 1978 Aeronautical Conferences. WARC-79 participation: Sydney Seminar; bilateral discussions. Attended numerous NATO/ARFA and CITEL meetings.

PARLOW, Richard

Chief, Spectrum Engineering and Analysis Division, NTIA. Holds BSEE from Univ. of Wisconsin and MEA from George Washington Univ. Formerly employed by Mitre Corp., Philco Corp., and U.S. Air Force (specializing in radio communications systems). ITU experience: Active in CCIR Study Groups. WARC-79 participation: Delegate to 1978 SPM; Nairobi and Sydney Seminars; bilateral discussions.

PHILLIPS, Paul

Physical Scientist, employed in Frequency Management Office, U.S. Army. Army representative to IRAC. Former U.S. Air Force Officer. WARC-79 participation: Panama Seminar; bilateral discussions. Delegate to NATO/ARFA.

PRICE, Richard M.

Radio Astronomer, National Science Foundation. Holds BS in physics from Colorado State University and PhD from the Australian National University. NSF representative to IRAC. Formerly employed by Nat. Bureau of Standards Laboratory, Boston, Mass.; and National Radio Physics Laboratory, Sydney, Australia. Served 8 yrs. as member of faculty, MIT Physics Dept. Employed by NSF since 1975. ITU experience: Delivered paper at 1976 IFRB Seminar.

PROBST, Samuel E.

Vice Chairman, U.S. WARC Delegation. Director, Spectrum Plans and Policies, NTIA. Holds degrees in civil engineering and electrical engineering from Univ. of Kansas and Penn State. Chairman, IRAC and Ad Hoc 144. Former spectrum manager for U.S. Army. ITU experience: Delegate to 1971 Space and 1973 Plenipotentiary Conferences; Chairman, U.S. Delegation, 1978 SPM. WARC-79 participation: Panama Seminar; bilateral discussions. Attended several CITEL meetings.

REINHART, Edward

Radio Engineering Manager, Communications Satellite Corporation. Holds BA and MA from University of California. Formerly employed by Rand Corp. and Jet Propulsion Laboratory, California Institute of Technology. ITU experience: Delegate to 1971 Space and 1977 Broadcasting Satellite Conferences; Delegate to 1971 SJM. WARC-79 participation: Delegate to 1978 SPM; Sydney Seminar; bilateral discussions.

ROBINSON, Glen O.

Chairman, U.S. WARC Delegation. Holds AB from Harvard Univ. and LLB from Stanford. Member of D.C. Bar. Attorney associated with Covington and Burling, 1961-62 and 1964-67. Professor of Law, Univ. of Minnesota, 1967-74. Commissioner, FCC, 1974-76. Since 1976, Professor of Law, Univ. of Virginia. Appointed Chairman, U.S. Delegation, January 1978.

SCHAEFER, Kalmann

Vice Chairman, U.S. WARC Delegation. Foreign Affairs Advisor, FCC. Attended numerous CITEL meetings. Experienced with UNESCO MacBride Commission and UN Committee on the Peaceful Uses of Outer Space.

SHRUM, Richard E.

Vice Chairman, U.S. WARC Delegation. Coordinator of Technical Affairs, Office of International Communications Policy, Dept. of State. Graduated from U.S. Coast Guard Academy (BS Eng.) and U.S. Naval Postgraduate School (MSEE). Former frequency manager for U.S. Coast Guard and FCC. ITU experience: Delegate to 1971 Space, 1974 Maritime, 1977 Broadcasting Satellite Conferences; Delegate to 1971 SJM; Delegate to 1976 and 1977 Sessions of Administrative Council. WARC-79 participation: Vice Chairman, U.S. Delegation, 1978 SPM; Nairobi and Sydney Seminars; bilateral Discussions. Delegate to NATO/ARFA.

STOWE, Ronald F.

Assistant General Counsel, Satellite Business Systems. Holds AB from Brown Univ. and JD from New York Univ. Formerly employed as attorney in Dept. of State Legal Adviser's Office; served with U.S. Mission to the UN. Delegate to several meetings of UN Committee on Peaceful Uses of Outer Space. WARC-79 participation: Delegate to 1978 SPM; Panama Seminar, bilateral discussions; member of WARC Advisory Committee.

TORAK, William

Vice Chairman, U.S. WARC Delegation. Assistant Chief, International and Operations Division, FCC. Univ. of Pittsburgh, BSEE. WARC-79 participation: Vice Chairman, U.S. Delegation, 1978 SPM; Panama Seminar, bilateral discussions. Delegate to NATO/ARFA. Attended several meetings of CITEL.

TYCZ, Thomas

Electronics Engineer, International Conference Staff, Office of Chief Scientist, FCC. Holds BSEE from Lowell Technological Institute, and MSEE from Univ. of Maryland. Previously employed by Air Force Systems Command and U.S. Navy Electromagnetic Compatibility Analysis Center (ECAC). Joined FCC January 1975. ITU experience: Active in CCIR Study Groups. WARC-79 participation: Bilateral discussions in Africa, Middle East and Latin America.

URBANY, Francis

Vice Chairman, U.S. WARC Delegation. International Manager, Spectrum Plans and Policies, NTIA. Holds AB from Harvard and JD and MS Bus. Admin. degrees from George Washington Univ. ITU experience: Delegate to 1973 Telegraph and Telephone, 1977 Broadcasting Satellite and 1978 Aeronautical Conferences. WARC-79 participation: Nairobi and Panama Seminars; bilateral discussions. Attended various meetings of CITEL, INMARSAT and INTELSAT.

VANDEN HEUVEL, William

U.S. Ambassador to the European Office of the UN and Other International Organizations, Geneva. Graduate of Cornell Univ. and Cornell Law School. Former Special Asst. to Attorney General Robert Kennedy, 1963-64. Served as Acting Regional Administrator, Office of Economic Opportunity, 1964-65; Vice President, N.Y. State Constitutional Convention, 1967; Chairman, N.Y. City Board of Correction, 1970-73; and Chairman, N.Y. City Commission on State-City Relations, 1971-73. Partner in law firm of Stroock, Stroock, and Lavin since 1965.

VAN DOORN, Arlan

Deputy Chief, Private Radio Bureau, FCC. Attended Univ. of Virginia and George Washington Univ. Previously employed as Senior Engineer, Western Development Laboratories and System Technology Center, Philco/Ford Corp. Serves as Vice Chairman, Radio Technical Commission for Marine Services. Participated as head of delegation in bilateral discussions with Mexico and Canada on various communications matters. WARC-79 participation: Panama Seminar; bilateral discussions.

WARVARIV, Constantine

Agency Director, Transportation and Communications, Bureau of International Organization Affairs, Dept. of State. Holds MS in Pol. Sci. from Columbia Univ. Formerly Deputy Chief of Mission, U.S. Mission to UNESCO, Paris, 1973-78. Has attended numerous international conferences. Served as U.S. Spokesman on drafting group at UNESCO 20th General Conference, November 1978.

WEISS, Hans

Director, Systems Engineering, Communications Satellite Corporation. Holds MS in Physics from Univ. of Karlsruhe (Germany). Formerly systems engineer for RCA. Employed by ComSat since 1964. Responsible for definition, design, and integration of advanced space communications systems. ITU experience: Delegate to 1971 Space, 1977 Broadcasting Satellite and 1971 SJM; active in CCIR Study Groups. WARC-79 participation: Delegate to 1978 SPM.

WEPPLER, H. E.

Director, Technical Standards and Regulatory Planning, AT&T. Holds BSEE from Purdue Univ. Radio engineer employed by AT&T since 1959. Member, NTIA's Fregeuncy Management Advisory Council, since 1967. ITU experience: Delegate to 1963 Space, 1971 Space, 1974 Maritime, 1977 Broadcasting Satellite, 1965 and 1973 Plenipotentiary Conferences; Delegate to 1966 CCIR XIth, 1970 XIIth, 1974 XIIIth, 1978 XIVth Plenary Assemblies and 1971 SJM; active in CCIR Study Groups; Chairman, U.S. CCIR Study Group 9. WARC-79 participation: Delegate to 1978 SPM; member of WARC Advisory Committee.

WILLIAMS, Francis K.

Chief, Treaty Branch, FCC. Holds BSEE from MIT. Has attended numerous International Civil Aviation Organization meetings. ITU experience: Delegate to 1974 Maritime and 1978 Aeronautical Conferences; active in CCIR Study Groups. WARC-79 participation: Delegate to 1978 SPM; Nairobi Seminar; bilateral discussions.

Abbreviations used:

ITU - International Telecommunication Union
CCIR - International Radio Consultative Committee
SJM - Special Joint Meeting of CCIR Study Groups held in 1971
SPM - Special Preparatory Meeting for 1979 WARC, held in 1978
IFRB - International Frequency Registration Board
CITEL - Inter-American Telecommunications Conference
NATO/ARFA - North Atlantic Treaty Organization/Allied Radio Frequency Agency
UNESCO - United Nations Economic and Social Council
ICAO - International Civil Aviation Organization
INTELSAT - International Telecommunications Satellite Organization
INMARSAT - International Maritime Satellite Organization
IEEE - Institute of Electrical and Electronics Engineers, Inc.
IRAC - Interdepartment Radio Advisory Committee

Mr. FASCELL. With respect to other political problems, the CSCE conference and basket 3 and free flow of information and balanced information and new world information order it seems to me are all wrapped up together. Do you anticipate jamming will come up, for example? It is both technical and political.

Mr. ROBINSON. We have not caught any wind of that particular issue and I would hope it would not come up but it is conceivable.

Mr. FASCELL. Nobody is being jammed but us; is that right?

Mr. ROBINSON. I could not answer that.

Mr. FASCELL. Mr. Jacobs.

STATEMENT OF GEORGE JACOBS, DIRECTOR OF RESEARCH AND ENGINEERING, BOARD FOR INTERNATIONAL BROADCASTING

Mr. JACOBS. The United States and Israel.

Mr. FASCELL. The United States and Israel.

Mr. JACOBS. Yes.

Mr. FASCELL. So if the United States or Israel does not bring it up, it will not come up?

Mr. ROBINSON. That is probably right but the problem is that while it could come up, I suppose Israel could raise it in the context of discussing allocations because it is one of the things that complicates the allocation picture I understand. The problem is that it is essentially a bilateral problem and for us to raise that in a multilateral forum quite frankly would be an unholy mess. I don't know how we could come out of that. I don't know how we could predict the outcome.

Mr. FASCELL. One unholy mess needs to be served by another unholy mess.

Mr. ROBINSON. It is possible but I tend to shy away from opening up that kind of debate in this kind of forum, particularly since the Soviet Union might otherwise be a very strong and important ally on many issues in which we have a vital interest; and this is one thing I don't think we—I doubt very much that we could not clearly win in the ITU on this issue if we were simply to drop it in out of the blue. It would not happen that way. We might cause the Soviet Union some other embarrassment but even that is somewhat debatable so, for myself—and I have thought a little about this because it could be raised—but on balance I would not raise it.

Mr. FASCELL. Won't it be raised indirectly anyway since the sovereignty issue with respect to the control of information is fundamental to the whole concept on what is going on in this conference?

Mr. ROBINSON. We don't know exactly in what context or how that question of free flow might arise. It is quite conceivable that that would come up in such a highly abstract way that it really would not lead to a debate.

Mr. FASCELL. Would it not come up directly over the allocation of space even though the country may not be in a position to use it adequately and even though it runs counter to the entire principal thrust of the U.S. position which is the efficient use of space on the theory that the country can use it? On the other hand, if a country claims space which they think is theirs and they don't want to give it up even though they are not presently capable of using it, won't that be tied in with their concept of balanced treatment in the world media

and their development of the infrastructure to compete? Isn't that fundamental to everything you are going to try to do?

Mr. ROBINSON. Well, there is a way of talking about those things that does not necessarily bring up the kind of debate that went on in UNESCO last year on free flow of information because that constitutes a different kind of political debate.

Mr. FASCELL. I understand it may not arise in political debate but I don't think technicians are necessarily nonpolitical.

Mr. ROBINSON. No, no. I would not insist that they were.

Mr. FASCELL. So the undercurrent will be there.

Mr. ROBINSON. The undercurrent will certainly be there. As I mentioned earlier, all of these technical issues do have a political base. Our technical positions have a political base. How do we decide the priority between broadcasting and fixed satellite or fixed service? How do we decide the priority between a defense facility and a commercial facility? How do we decide any of these positions? We do it on the basis of our own socioeconomic and political needs.

Mr. FASCELL. Do you have a good human behavioral expert on your staff?

Mr. ROBINSON. We all fancy ourselves as being psychologists.

Mr. FASCELL. I realize that.

Mr. ROBINSON. No; I don't have anybody who is trained on the subject. I may write a book on that after I am through.

Mr. FASCELL. We all think we are experts in dealing with other people but the truth of the matter is we are not.

Mr. ROBINSON. Yes.

Mr. FASCELL. You know, I am not being facetious.

Mr. ROBINSON. No. We obviously do not have the sort of luxury of having our own house psychologist.

Mr. FASCELL. I was not even thinking of that but that might not be bad. You could use a nice team, a cultural anthropologist and a behavioral psychologist. It might be a luxury.

Mr. ROBINSON. No more luxury than perhaps some others.

Well, I would consider any recommendations.

Mr. FASCELL. You are going to have eight experts coming from the Congress.

Mr. ROBINSON. Could you bring your own psychologist with you?

Mr. FASCELL. We do have a House psychologist.

Mr. ROBINSON. Is that right?

Mr. FASCELL. He's called a chaplain.

Mr. ROBINSON. You are one up on the State Department; I don't think we have one.

Mr. FASCELL. You better get one for this delegation.

Mr. ROBINSON. A chaplain or a psychologist?

Mr. FASCELL. It might not be a bad idea to have someone who wears both hats.

Mr. BUCHANAN. If you ever watch us vote, too, in our new electronic voting thing, we all have cards and they are thoroughly punched by the chaplain.

Mr. FASCELL. Well, I must say that the preparatory work that you put into this thing is, from all aspects I can see, very good and none of us underestimates the difficulty that this delegation is going to face. Your communication with your backup group is going to have to be as close and effective as you can possibly make it. A great deal of it you

are going to have to do on the spot based on your best judgment and efforts.

Do you have any other questions?

Mr. BUCHANAN. No. Good luck.

Mr. FASCELL. I will add to that and say good luck.

Mr. ROBINSON. Thank you.

Mr. FASCELL. As you get ready to go in September, it seems to me I recall somewhere that the nonalined group is meeting in Cuba at the same time.

Mr. ROBINSON. That is right, sir.

Mr. FASCELL. Goodness knows what resolutions will come out of that. By the way, does WARC operate on the basis of resolutions?

Mr. ROBINSON. We have many resolutions, yes. They don't necessarily have any operative effect but there are a lot of resolutions.

Mr. FASCELL. Does the final work of the committees go to the plenary for resolution?

Mr. ROBINSON. Yes.

Mr. FASCELL. Is there a resolutions preparation committee?

Mr. ROBINSON. No.

Mr. FASCELL. Does each committee prepare its own end product and present it to the plenary?

Mr. ROBINSON. Yes; with whatever votes are taken.

Mr. FASCELL. So the position struggle basically is in the committees.

Mr. ROBINSON. That is right, it is.

Mr. FASCELL. The committees will work toward achieving consensus rather than operating by majority vote so that the chances are better that when the resolutions go to the plenary it will also act, by consensus?

Mr. ROBINSON. Subject to minor editorials and things like that and perhaps some little whistles and bells being attached to the proposals but, yes, I think that is essentially correct.

Mr. FASCELL. Are the rules of the Conference institutionalized?

Mr. ROBINSON. Yes, there is a set of rules and procedures.

Mr. FASCELL. Do they have to be adopted at the start of every Conference?

Mr. ROBINSON. No, they are part of the permanent conference.

Mr. FASCELL. They are part of the permanent conference.

Mr. ROBINSON. Yes. All we will be amending are the appended regulations.

Mr. FASCELL. Does WARC have a secretariat?

Mr. ROBINSON. The ITU has a permanent secretary.

Mr. FASCELL. I mean WARC itself.

Mr. ROBINSON. No. The secretary for the WARC, the people who are handling the administrative arrangements are the ITU staff.

Mr. FASCELL. OK. Thank you very much, Mr. Robinson. We appreciate it. We might very well do this same kind of thing after the Conference.

Mr. ROBINSON. I would welcome it. I won't be far away.

Mr. FASCELL. OK. Thank you very much.

Without objection, we will include the statement of Ambassador Gronouski, Chairman of the Board for International Broadcasting, at this point in the record.

[The statement referred to follows:]

STATEMENT OF JOHN A. GRONOUSKI, CHAIRMAN, BOARD FOR INTERNATIONAL BROADCASTING

Thursday, June 14, 1979

Mr. Chairman, I am very pleased to appear before this distinguished subcommittee in support of the U.S. Delegation's efforts at WARC-79.

You know from my previous appearances before this subcommittee of my interest and involvement in the human rights issue, particularly in the freedom to impart and receive information. I appear before this subcommittee today because of my concern with the political implications of WARC-79. If the results of the Conference are favorable from our point of view, it could encourage a free and balanced flow of information. If the outcome is unfavorable, this vital flow could be severely restricted for at least the remainder of this century. I am talking here about broadcasting on the high frequency bands. In the field of human communications,

high frequency broadcasting plays a unique role. Technically, it is the only mass broadcasting medium capable of direct, universal, personal and immediate communication to individuals and audiences throughout the world, without the prior consent of the recipient government.

Political factors that in my view are almost certain to make themselves felt at WARC-79, either directly or indirectly, derive from both the East-West ideological struggle and the North-South communication imbalance. While almost every country in the world broadcasts on high frequency, the Soviet Union is the leader in this field, followed closely by the U.S., with the Peoples Republic of China, the United Kingdom and the Federal Republic of Germany not far behind.

Most developing countries also have a legitimate interest in high frequency broadcasting but they claim to have been "squeezed out" by the industrial nations who were there first and who have greater resources. They are certain to clamor for their "fair share of the frequency pie" at WARC-79. The Conference thus looms as a serious three-way confrontation between West, East and the Third World for control of frequencies. I don't see how it can be avoided, and we must be alert to politically motivated strategies disguised as technical proposals.

Let me cite an example. In WARC-79 proposals already submitted to the ITU, several countries which maintain closed societies, resort to jamming foreign broadcasts and exercise censorship and other media controls are pressing for further restrictions for high frequency broadcasting. The Soviet Union, which recently announced the bringing into operation of 29 of the world's most powerful high frequency broadcasting transmitters, is calling for no increase in frequencies for broadcasting. The Soviets can afford to take such a position. They have established "safe havens" for their broadcasting by preempting segments of the high frequency spectrum reserved originally for other communication services, most of which have subsequently moved to satellites or other technologically advanced telecommunication systems. By resorting to the device of "reservations" taken at previous ITU conferences for justifying the takeover of these frequencies, Soviet broadcasts escape most of the severe interference that the rest of the world is encountering in the badly congested broadcasting bands. Obviously, the Soviets would like to keep these broadcasting enclaves more or less for themselves.

If this Soviet proposal were to prevail and a Third World majority were successful in forcing a more balanced distribution of the present congested frequencies from their point of view, it would be the broadcasting efforts of the open society nations that would suffer the most.

What can be done to avoid such an outcome? I believe that the U.S. has already taken the most important step by proposing an adequate expansion of the high frequency broadcasting bands so that the broadcasts of all countries might be heard clearly and without interference. Basically, our proposal would make the present priveleged sanctuaries of the Soviet Union available for the entire would to use. Our proposal also recognizes the specialized broadcasting desires and goals of the developing countries.

There is little doubt now that the high frequency region of the radio spectrum will be the most discussed subject at the Conference, with the likelihood that broadcasting will draw the most attention. While I am confident that the U.S. proposals are responsive to the world's broadcasting needs, I recognize the formidable effort that remains yet to be mounted if we are to gain majority support for them at WARC-79.

I believe that we have attractive proposals that protect the broadcasting rights of all countries, and that our Delegation will be adequately staffed to negotiate them successfully.

The BIB has made available to the Delegation, George Jacobs, our Director of Engineering. Mr. Jacobs has a distinguished governmental career in international broadcasting spanning three decades, including a long string of

outstanding accomplishments at previous ITU Conferences. He is the main architect of the U.S. proposal for high frequency broadcasting and it is my understanding that he will participate in all aspects of the Conference dealing with broadcasting and the free flow of information, and in the sensitive negotiations that are likely to develop.

We are also pleased that Mrs. Anna Case of the Voice of America has been appointed to the Delegation and will act as spokesperson for high frequency broadcasting on the Conference floor.

We have also nominated to the Delegation, Mr. Stanley Leinwoll, Director of Engineering (U.S.) for RFE/RL, Inc., and a recognized authority in international broadcasting. As you well know, Mr. Chairman, our Board has oversight responsibility for RFE/RL, which is supported by Congressional funds whose authorization passes in the first instance through this subcommittee. Radio Free Eupre and Radio Liberty share with the VOA responsiblity for most of the international broadcasting effort emanating from this country.

Because of its importance to the free flow of information, I intend to monitor the Conference's progress very carefully. If it should become involved directly in certain political issues concerning broadcasting, I am prepared with Walter Roberts, our Executive Director, to participate in the deliberations.

I am now in a position to tell this subcommittee that the U.S. has produced excellent proposals for high frequency broadcasting, and that the Delegation will be well equiped to negotiate them successfully. I want to assure you that this effort will have our full support.

In closing, I would like to have inserted in the record the attached summary and analysis of the U.S. WARC-79 proposals for high frequency broadcasting.

Thank you.

69-439 O - 80 - 5

A Summary and Analysis of the WARC 1979 U.S. Proposals for HF Broadcasting[1]

OBJECTIVES

1. To seek an equitable solution to the existing problems of congestion, interference, and high power proliferation caused by the lack of sufficient spectrum in the existing bands allocated to the HF Broadcasting Service.

2. To preserve the present spectrum planning procedure for the HF broadcasting bands contained in Article 10 of the Radio Regulations which provides for the free and equal access of all countries to these bands, assures a free and balanced flow of information, and contains the necessary flexibility to meet changing conditions, provided sufficient spectrum is allocated at WARC-79 to accommodate the on-the-air frequency requirements of all administrations and to take into account a reasonable level of growth through the remainder of this century.

3. To maintain most of the exisiting allocations to HF broadcasting and to expand these allocations between 5.8 and 21.8 MHz by 1,640 kHz, in order to provide sufficient spectrum for the broadcasts of all countries to be heard without interference.

4. To introduce certain technical regulations in order to insure greater conservation and more efficient use of the spectrum allocated to HF broadcasting by reducing the proliferation of unwarrented frequency usage and exceptionally high power transmiters.

5. To protect the broadcasting rights and the legitimate spectrum requirements of all countries, but to the extent practical, identify specifically and support the reasonable desires and goals of the developing countries.

[1] Prepared by George Jacobs, Director of Engineering, June 15, 1979.

MAIN POINTS OF U.S. WARC-79 PROPOSAL FOR HF BROADCASTING

Allocation Proposals (Article N7/5):

* Expands the present HF allocations for broadcasting between 5.8 and 21.8 MHz by an additional 1,640 kHz, or 89%. (Approximately 1,000 kHz of this total represents spectrum in bands presently allocated to the Fixed Service, but being used for broadcasting by a large number of countries on an " out of band" basis.)

* Preserves the present allocations to HF broadcasting below 5.8 MHz, recognizing the continuing need and importance of those bands allocated to countries in the ITU defined "Tropical Zone".

* Supports the specialized domestic broadcasting and fixed requirements of developing countries by proposing 300 of the expanded 1,640 kHz between 5.8 and 21.8 MHz for the exclusive use of countries located in the Tropical Zone (Radio Regulation 3496/202).

* Reduces the present allocation to the under-used 26 MHz band by 250 kHz.

* Shifts the present broadcasting allocation in Regions 1 and 3 between 7.1 and 7.25 MHz so that this segment can be allocated exclusively to the Amateur Service on a worldwide basis.

* Preserves the free and equal access coordination planning procedure contained in Article 10 of the Radio Regulations.

* Permits domestic HF Fixed Service requirements of all countries to continue on a shared basis in the expanded allocations through ffotnote action (Footnote 3506 A).

Technical Proposals (Article N28/7):

* Requires the Conference to determine a date for the mandatory introduction of single-sideband emission in the HF bands allocated to broadcasting. (Radio Regulation 6215 A and Resolution A.)

* Establishes a power limit of 250 kW for international broadcasting and 50 kW for domestic broadcasting in the HF bands (Radio Regulations 6215 B and D).

* Limits Administrations to the use of a single frequency in each band for each different program transmitted to a specific ITU reception zone (Radio Regulation 6215 C).

* Reduces the permissible level of spurious emission from HF broadcasting transmitters (Radio Regulation 6215 F).

The following appendices contain statistical and other data upon which the U.S. WARC-79 proposals for HF broadcasting are based.

PROPOSED U.S HF BROADCASTING ALLOCATIONS

WARC- 79

(5.85- 26.1 MHz)

Band Segment (kHz)		Notes	Bandwidth (kHz)
5850- 5900	FX/BC	(3496/202)	50
5900- 5950	BC	(3506A)	50
5950- 6200	BC	(Existing Retained)	250
7100- 7250		(Exisiting Reg. 1&2 Deleted)	
7250- 7300	BC	(Existing Reg. 1&2)	50
7300- 7500	BC	(3506A)	200
7500- 7550	FX/BC	(3496/202)	50
9375- 9500	BC	(3506A)	125
9500- 9775	BC	(Exisiting Retained)	275
9775- 9825	BC	(3506A)	50
9825- 9875	FX/BC	(3496/202)	50
11500- 11550	FX/BC	(3496/202)	50
11550- 11700	BC	(3506A)	150
11700- 11975	BC	(Existing Retained)	275
11975- 12000	BC	(3506A)	25
13600- 13850	BC	(3506A)	250
13900- 14000	FX/BC	(3496/202)	100
15100- 15450	BC	(Existing Retained)	350
15450- 15700	BC	(3506A)	250
17600- 17700	BC	(3506A)	100
17700- 17900	BC	(Existing Retained)	200
19750- 19990	BC	(3506A)	240
21450- 21750	BC	(Exisiting Retained)	300
21750- 21800	BC	(3506A)	50
25600- 25850		(Existing Deleted)	
25850- 26100	BC	(Existing Retained)	250
		TOTAL	3,740

Proposed Footnote 3506A

Those administrations who continue to have requirements for national fixed operations in the bands 5900-5950 kHz, 7300-7500 kHz, 9375-9500 kHz 9775-9825 kHz, 11550-11700 kHz, 11975-12000 kHz, 13600-13850 kHz, 15450-15700 kHz, 17600-17700 kHz and 19750-19990 kHz may continue to meet their special fixed service requirements in these bands. Fixed service operations will take due regard to technical and operational provisions with a view to minimizing the possibility of harmful interference to the Broadcasting service. The Broadcasting service will exercise care in the selection of power, location, antenna directivity, and broadcasting schedules with a view to minimizing harmful interference to the fixed operations of those administrations concerned. Administrations are urged to establish sharing arrangements where the possibility of harmful interference appears likely. The service of the IFRB may be utilized in the conduct of such negotiations, if required.

STATISTICAL COMPARISON BETWEEN

U.S. WARC-79 PROPOSALS FOR H.F.

BROADCASTING AND EXISTING ALLOCATIONS

1. Between 5,850 and 21,800 kHz

Existing Allocations:

1,650 kHz Worldwide
200 kHz Regions 1 & 3

TOTAL= 1,850 kHz

U.S. Proposed Allocations:

Existing Worldwide Retained: 1,650 kHz
Existing Regions 1 &3
Proposed Worldwide: 50 kHz
Additional Worldwide Proposed
(Footnote 3506 A): 1,490 kHz
Additional Proposed
(Radio Reg.3496/202): 300 kHz

TOTAL= 3,490 kHz

Proposed Increase From
Existing Allocations: 1,640 kHz

% Increase From Exisiting
Allocations: 89 %

2. The U.S. proposes a reduction of 250 kHz in the present 26 MHz band.

3. The U.S. proposes no changes to H.F. broadcasting allocations below 5,850 kHz.

RESOLUTION No. [A 7]

to the CCIR

Relating to the Expeditious Introduction of Single-Sideband Systems for Broadcasting in Band 7 (HF)

The World Administrative Radio Conference, Geneva, 1979

considering

a) the frequency utilization advantages of a single-sideband broadcasting system in Band 7;

b) the technical advantages of such a system in reducing interference and the effects of fading;

c) the energy conservation potential for such a system;

d) the advantages of a world-wide standardized single-sideband broadcast system;

e) the need for a substanial world-wide distribution of low cost receivers capable of tuning single-sideband broadcasts as an incentive to introduce such a system in Band 7;

recognizing that the introduction of single-sideband transmisaion for broadcasting in Band 7 is desirable at the earliest practical date following the implementation of these Regulations,

invites the CCIR

1. to expedite studies in response to Questions 25/10, 36/10 and 41/10 which deal with the transmission and reception of single-sideband broadcasts in Band 7;

2. to establish a timetable in which the necessary conditions might be met for the compulsory use of single-sideband for broadcasting in Band 7.

ARTICLE N28

Broadcasting Service and Broadcasting-Satellite Service

Section I. Broadcasting Service

NOC 6213

NOC 6214 422 Reason: Necessary and adequate as drafted.

MOD 6215/423 In principle, except in the frequency band 3 900 - 4 000 kHz Broadcasting stations using frequencies in the bands shown in 6218/425 or above 26 100 kHz shall not employ power exceeding that necessary to maintain economically an effective national service of good quality within the frontiers of the country concerned.

Reason: To state the principle without exception and to align with allocation proposal.

ADD 6215A In the interest of increasing spectrum utilization in the HF Broadcasting Bands all Broadcasting stations in the bands between 2300 - 26 100 kHz will discontinue the use of double sideband emissions by [January 1, 1995; date to be decided by the Conference - see also ADD Resolution [A 7].

Reason: For increased spectrum utilization.

ADD 6215B To enhance sharing possibilities and to improve receiving conditions, broadcasting stations in Band 7, while complying with the provisions of No. 4998/694 shall in no event employ a transmitter output power in excess of 54 dBW.

Reason: To enhance sharing possibilities and to improve receiving conditions.

ADD 6215C In Band 7, no administration shall employ more than one frequency per frequency band to provide simultaneously the same modulated signal to any zone or to contiguous zones.

Reason: To increase spectrum utilization, to enhance sharing possibilities, and to improve receiving conditions.

ADD 6215D Notwithstanding the provisions of No. 6215B, broadcasting stations operating in Band 7 and notified as serving a target area partially or wholly inside the country containing the station shall in no event employ a transmitter output power in excess of 47 dBW.

Reason: In conjunction with MOD 6215/423, to encourage the placement of domestic and similar services outside of Band 7 wherever feasible.

ADD 6215E Broadcasting stations operating in Band 7 and serving an area as defined in ADD No. 6215D shall not operate on a frequency above 14,000 kHz.

Reason: To increase spectrum utilization, to enhance sharing possibilities, and to improve receiving conditions in conjunction with Nos. 6213/423 and ADD 6215D.

ADD 6215F Notwithstanding the provisions of footnote 1 to Appendix 4 or any other provisions of these Regulations, no transmitter operating in the broadcasting service in Band 7 shall supply to the transmission line a mean power of any spurious emission in excess of -30 dBW.

Reason: To improve spectrum utilization and to assist in the resolution of cases of harmful interference attributable to such spurious emissions.

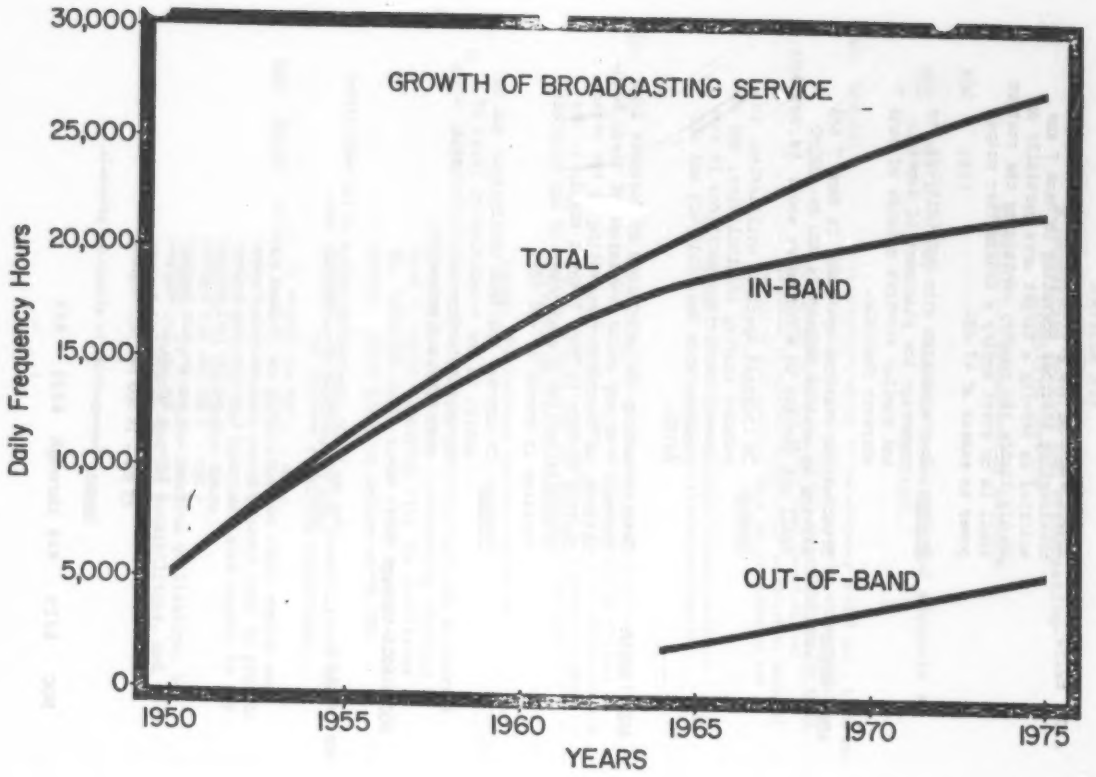
NOC 6216 through 6217 424

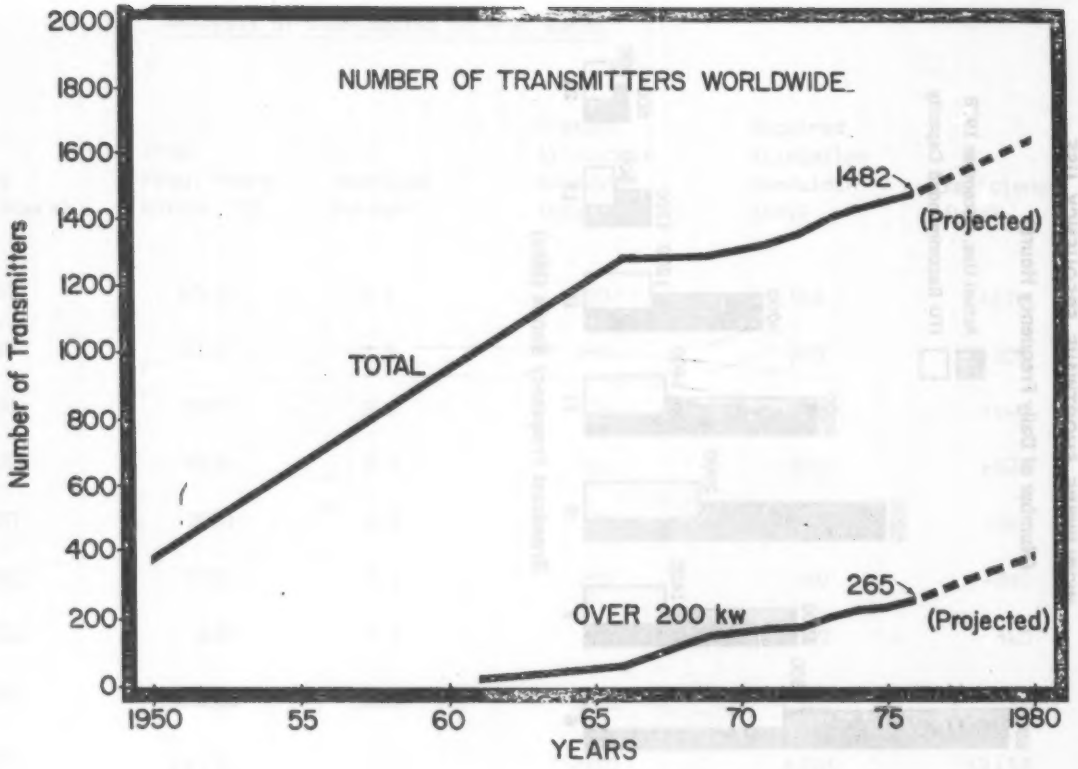
MOD 6218/425 The use by the broadcasting service of the bands listed below is restricted to the Tropical Zone:

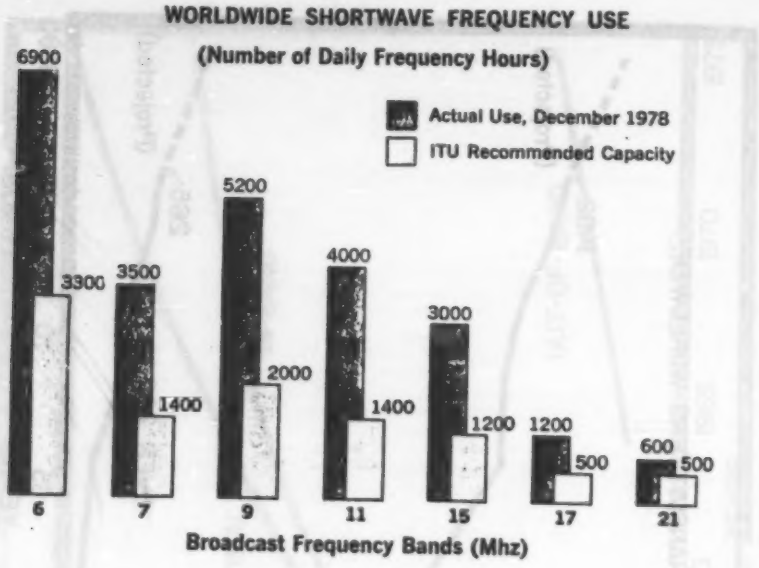
2 300 - 2 498 kHz (Region 1)
2 300 - 2 495 kHz (Regions 2 and 3)
3 200 - 3 400 kHz (all Regions)
4 750 - 4 995 kHz (all Regions)
5 005 - 5 060 kHz (all Regions)
5 850 - 5 900 kHz (all Regions)
7 500 - 7 550 kHz (all Regions)
9 825 - 9 875 kHz (all Regions)
11 500 - 11 550 kHz (all Regions)
13 900 - 14 000 kHz (all Regions)

Reason: Consequential to allocation proposals.

NOC 6219 426 through 6221 428


GROWTH OF BROADCASTING SERVICE
TOTAL
IN-BAND
OUT-OF-BAND
Daily Frequency Hours
30,000
25,000
20,000
15,000
10,000
5,000
0
1950
1955
1960
1965
1970
1975
YEARS


NUMBER OF TRANSMITTERS WORLDWIDE
Number of Transmitters
2000
1800
1600
1400
1200
1000
800
600
400
200
0
1482
(Projected)
TOTAL
265
OVER 200 kw
(Projected)
1950
55
60
65
70
75
1980
YEARS


WORLDWIDE SHORTWAVE FREQUENCY USE
(Number of Daily Frequency Hours)
Actual Use, December 1978
ITU Recommended Capacity
6900
3300
3500
1400
5200
2000
4000
1400
3000
1200
1200
500
600
500
6
7
9
11
15
17
21
Broadcast Frequency Bands (Mhz)

Analysis of Overloading in HFBC Bands

Band (MHz)	Band Capacity (Freq. Hours)	IFRB Freq. Hours Winter '78	Overload Factor	Present Allocation Bandwidth (kHz)	Required Allocation Bandwidth (kHz)	Deficiency (kHz)
6	3300	6900	2.1	250	525	+275
7	1400	3500	2.5	200	500	+300
9	2000	5200	2.6	275	715	+440
11	1400	4000	2.9	275	800	+525
15	1200	3000	2.5	350	875	+525
17	500	1200	2.4	200	480	+280
21	500	600	1.2	300	360	+60
26	300	150	-0.5	500	250	-200
	10600	24530	2.3	2350	4505	+2155

Analysis of U.S. WARC-79 H.F. Broadcasting

Proposals

Freq. Band kHz	BANDWIDTH (kHz) Total Required	Existing Allocation	Existing % Deficiency	U.S. Proposal	Remaining % Deficiency
6	525	250	52	350	33
7	500	200	60	300	40
9	715	275	62	500	30
11/13*	800	275	66	750	6
15/13*	875	350	60	750	14
17/19**	480	200	58	480	0
21/19**	360	300	17	360	0
26	300	500	+66	300	0
SUMMARY					
6-22 MHz	4,255	1,850	57%	3,490	18%

Total Bandwidth Required: 4,255 kHz
Total Bandwidth Existing: 1,850 kHz
Present Bandwidth Deficiency: 2,405 kHz
Additional Bandwidth (U.S.): 1,640 kHz
Remaining Deficiency : 765 kHz #

Remaining bandwidth deficiency to be further reduced with the implementation of proposed U.S. technical standards for the eventual introduction of singlesideband techniques for HF broadcasting; reduction in the use of multiple frequencies; establishing maximum power levels; and the further reduction of spurious emissions.

* 13 MHz proposed allocation split between 11 and 15 MHz deficiencies.

** 19 MHz proposed allocation split between 15, 17 and 21 MHz deficiencies.

Mr. FASCELL. The subcommittee stands adjourned subject to the call of the Chair.

[Whereupon, at 12:08 p.m., the subcommittee adjourned.]

THE WORLD ADMINISTRATIVE RADIO CONFERENCE AND INTERNATIONAL COMMUNICATIONS POLICY

THURSDAY, JULY 31, 1980

HOUSE OF REPRESENTATIVES,
COMMITTEE ON FOREIGN AFFAIRS,
SUBCOMMITTEE ON INTERNATIONAL OPERATIONS,
Washington, D.C.

The subcommittee met at 10:50 a.m., in room 2200, Rayburn House Office Building, Hon. Dante B. Fascell (chairman of the subcommittee) presiding.

Mr. FASCELL. The subcommittee will come to order.

We meet today to complete the subcommittee's oversight on the 1979 World Administrative Radio Conference which took place from September 24 to December 6, 1979.

We conducted a preliminary hearing concerning the preparations for WARC on June 14 of last year. We will now hear some individual reactions to the outcome of the WARC, the prospects for the future, and the problems of the organizations of the U.S. Government in the area of international communications policy.

Testifying today are Prof. Glen O. Robinson, chairman of the WARC delegation and the six vice-chairs of the WARC delegation.

They are—we have an imposing delegation—Richard E. Shrum, Office of International Communications Policy, Bureau of Economic and Business Affairs, Department of State;

Wilson Dizard, Senior Policy Adviser for International Communications Policy, International Communication Agency;

Francis S. Urbany, Manager, International Communications, National Telecommunications and Information Administration;

Ed Probst, Deputy Associate Administrator for Spectrum, National Telecommunications and Information Administration;

Kalmann Schaefer, Foreign Affairs Adviser, Federal Communications Commission; and

William R. Torak, International and Operations Division, Office of Science and Technology, Federal Communications Commission.

Gentlemen, we are delighted to have you here. Welcome back.

We heard you had a good conference. We are anxious to hear all about it.

Mr. Robinson, would you proceed?

STATEMENT OF GLEN O. ROBINSON, CHAIRMAN, U.S. DELEGATION, WORLD ADMINISTRATIVE RADIO CONFERENCE, 1979

Mr. ROBINSON. Thank you, Mr. Chairman. I am very pleased to be here today to report on the results of the Conference and talk a little bit with you about some of the implications of that Conference.

I have a prepared statement which I will submit for the record.

Mr. FASCELL. Without objection, the full statement will be included in the record.

Mr. ROBINSON. With that in the record, I can summarize my prepared remarks and then turn to my experts on the right and left to tell you what really happened.

Mr. Chairman, although it did not compete for other international events such as SALT II and the Middle East peace talks, the Iranian hostage crisis and sundry other events, WARC was nevertheless an important Conference. It involved the management and the allocation of an international resource, the radio spectrum that is becoming increasingly vital to the social and economic welfare of every nation in the world.

Although the primary tasks of the WARC were technical in character, WARC also excited intense political controversy for a time because of its foreseen relevance to the emerging dialog over a so-called new world information order. That is a concept which, as you know, Mr. Chairman, has been much debated in recent years in the U.N. and UNESCO and other forums. Before the WARC, there was a great deal of speculation that the Conference might provide a major opportunity for engaging in a debate on the new world information order, a debate that is primarily between developed and developing countries over such issues as free flow of information, development assistance, and other issues.

Such a debate did not materialize, a fact which I am pleased to report, given that the U.S. position going into the WARC was that this was not an appropriate forum for furthering that dialog, important though it may be.

Though the Conference was not, of course, devoid of political considerations it did, in fact, devote most of its business to the specific tasks of revising radio spectrum allocations and associated regulations, tasks that were perhaps a bit more dull than the more general debate over a new world information order, but which were, I think, successfully completed in large measure because of the absence of more general political rhetoric. That the Conference was successful I have no doubt. When the record of the Conference is studied in full detail that will be the general consensus.

Before the WARC, it was common in the United States and in some other countries, to depict the United States and other developed countries as defenders of the status quo beleaguered by an army of Third World developing countries bent on a racial reshaping of the international communications order to their advantage and our disadvantage. If one accepted that view of the situation on the eve of WARC, one might be tempted to say that the actual outcome of the Conference was, in the words of Horatio Nelson, a "great and glorious

victory" for the United States since the international order was not significantly altered to our disadvantage.

However, to talk about a great and glorious victory as though the United States alone emerged victorious would be highly misleading. In fact, it was the common consensus of all the participants at the Conference that all the nations of the ITU emerged the winners.

In terms of specific U.S. objectives, it is natural, of course, to try to assess the results of an enterprise in terms of a scorecard of how many proposals, how many objectives were won and lost. While that is possible in some sense, it would be very misleading to try to go down the list of our proposals and say which ones we achieved and which ones we did not. For one thing, not all of our proposals were of equal importance to basic national interests. More important in any event is the fact that our proposals were not necessarily an actual reflection of our total objectives. It is ultimately the objectives, not the particular form of the proposals that must be assessed.

Mr. Chairman, I will not run through the list of all of the items on the specific agenda, though we can, if you will, pull out one or two that are most important.

First I will talk for a little bit about the general objectives and how we fared on those.

Going into the Conference, we had expressed basically four general objectives. Our first objective was to support the role of the ITU as an organization responsible for international spectrum allocation and management. Some people viewed that as a status quo thing, but we are very strong supporters of the traditional role of the ITU and we were happy to see the ITU emerged out of this Conference as strongly as it traditionally has been, as the premier international organization responsible for spectrum management.

A second major objective was to maintain ITU processes which provide maximum flexibility and adaptability to changing needs. This was a controversial objective in the sense that many people thought that the ITU processes were cumbersome and unfair and needed radical overhaul. We did change a number of the specific procedures for allocating radio spectrum, but on the whole I think the ITU processes emerged as strong and efficient. We retained most of the flexibility of the system, and in doing so I think we protected our basic objective.

Our third major objective was to achieve international agreement on some incremental changes— we all stressed the word "incremental" which I will explain in a moment—in the ITU regulations in order to enhance specific U.S. economic, social, and national security interests.

I stress the word "incremental" to denote the fact that we did not see the need for radically revamping most of the allocations. In most cases what we sought at the conference were adjustments in particular allocations to meet changing communications needs. In most cases, I think it is fair to say, our approach was the approach followed by the Conference as a whole.

Fourth, and by no means least, we had the objective of supporting changes in allocations and related procedures which would accommodate the needs of other nations consistent, of course, with our own essential requirements while at the same time endeavoring to avoid or limit the impact of political efforts to restrict our use of the spectrum.

I have already commented on the political aspects. I can say that we were successful in keeping the Conference focused on the specific agenda at hand and avoiding general political debate over new world information order objectives which we thought were more properly addressed in forums such as the U.N. and UNESCO.

We did support most of the responsible changes that were put forward by the other participants. We did end up taking five reservations on particular matters which we can go into, but in general those reservations do not impeach my statement that we regard the Conference as successful.

We agreed with most of the changes made. Some of the more sensitive problems, some of the more sensitive issues, were postponed and we may yet have to revisit them in the future, but in general the Conference addressed the changes in a responsible and fairminded fashion. Certainly from the standpoint of our interests, from the standpoint of our support of the ITU, we cannot really complain.

With that general introduction, let me skip over some of the specific items and come back to them as you like.

I would like to consider some of the more general implications for the future. As I said, I don't think the ITU or its basic processes were changed in any way to our disadvantage or to the disadvantage of the other participants. I do think that what WARC did was to focus, for a brief time, a bright light on the work of the ITU and gave increased recognition to its importance and the important role which it is going to play in the future. There is no question international spectrum regulation will assume an increasingly important role in the field of international communications. I say this quite independent of any general philosophical debate about new world information order, which I regard as heavily, if not entirely rhetorical.

Independent of the merits or demerits of some of the issues embraced by the new world information order, I think that international spectrum allocations itself is a discrete subject. It will be recognized as an important area for international negotiation in the future.

If this assessment is correct, it implies a somewhat greater recognition on the part of the U.S. communications policymakers to its international aspects. This is not limited to electronic communications, but there is no doubt that electronic communications and, hence, radio spectrum regulation, is going to be the focal point for international negotiations over communications policy.

This implies an important role for the ITU. I mentioned earlier that some of the major issues at the 1979 Conference were postponed to a series of specialized and regional WARC's to be held throughout the 1980's. In general the United States favored these conferences. Such specialized conferences are not a new thing; in fact, they are really the norm for the ITU. However, the scheduling of a series of such conferences by a general WARC is somewhat unique, setting out a new pattern of ITU activity. It may, in fact, be that another general WARC of the scope of this one might not be convened for the foreseeable future.

There was some interest on the part of some delegates for convening another such conference in 10 years, but I think in general the re-

action to that proposal at the Conference was one of mild disbelief that we could either launch such another major event in 10 years or that anybody would want to. That attitude probably reflects the notion that it is going to be increasingly more efficient, more sensible to conduct a series of specialized, highly focused conferences with particular allocations problems rather than one great big conference to try to embrace them all.

What this means, is that we will be dealing in the future not so much with individual conferences, although there will be a lot of individual conferences, as an ongoing negotiation process. One conference will fade into another. In fact, you can already see this happening. We came back from the 1979 Conference and immediately the United States went off to a regional conference in South America. There are conferences scheduled almost every year between now and the end of the 1980's of one kind or another.

The U.S. preparations for such conferences will have to be a continuing effort, not something you start up and then wind down and then start up again. This will require a level of preparation, of constant preparation and a level of coordination which will assure that preparations not only link the different ITU conferences with each other, but also link the ITU conferences with the ongoing dialog on international communication policy generally, that means with other conferences at UNESCO and at the U.N., et cetera.

For future conferences, I do not propose any dramatic or substantial, even, changes in the basic approach we followed for 1979. It has been suggested from time to time that what we really need is to reorganize the entire spectrum management authority to centralize it. I am not convinced that that is either practicable or wise at this point.

As you know, the current domestic policies are the province of two separate agencies, the FCC and the NTIA. These, in coordination with other agencies, industry, and the private sector generally come together to develop an international policy. At that point the State Department gets in the act.

I think that process worked reasonably well for WARC. I don't say that it was always an easy thing to accomplish. We spent the better part of 5 years preparing for WARC and there were some conflicts and frictions along the way, but the test of a good system is whether it works. It did, in fact, work for the 1979 Conference.

We did have a coherent policy. We were able to coordinate domestic policy quite well, despite the bifurcated organization, the fragmented organization which we had in the United States.

With respect to the role of the State Department, it has been suggested from time to time that the State Department perhaps should have a greater role in this. I guess I would have to say that for 1979 at least I thought the State Department played about the right role. It was a role in which we were an active participant in shaping the international policy as well as representing it abroad.

I don't see a great deal of—I don't see the need for a great deal of additional resources to be funneled into the State Department to handle this role. It is really sufficient if the State Department plays an important coordinating role among the different agencies concerned with international spectrum management.

There is an important role to play, of course, in coordinating all international communications policy. This is a role that has to be played by the State Department. I think we did that reasonably well for the 1979 Conference. We had a group set up in the State Department which regularly met to develop linkages between UNESCO policies and UNESCO negotiations, and the ITU business, and it worked reasonably well.

I think that coordination mechanism must be retained. It must be, if anything, strengthened, although I don't have any specific proposals to make as to how it might be strengthened, other than perhaps to encourage the Department to give it a high priority and to devote sufficient resources to that task of coordination, if carried out.

At the present time that task is largely lodged with Under Secretary Matthew Nimetz. I have not been connected with that since the Conference, but from all appearances it seems to be working reasonably well. Beyond a strong State Department role for coordinating international communications policy and beyond a heightened awareness that this is an important area for the future, as I say, I have no specific recommendations to make for reorganization or additional changes in the institutional structure by which we make these policies.

From time to time it has been suggested that perhaps we need to create a central office within the State Department which would handle all international communications policy. I am not convinced that is required. I don't really have any strong views on it one way or the other. I think it is probably sufficient if you have someone in the top ranks of the State Department who is aware of the different issues and aware of the need for coordinating between them.

Mr. Chairman, I will let the statement rest at that and ask you if you have any questions to which I will be happy to respond.

[Mr. Robinson's prepared statement follows:]

PREPARED STATEMENT OF GLEN O. ROBINSON, CHAIRMAN, U.S. DELEGATION, WORLD ADMINISTRATIVE RADIO CONFERENCE, 1979

Mr. Chairman, members of the Committee, I am pleased to be here today to review with you the results of the 1979 World Administrative Radio Conference (WARC) completed last December.

Though it did not compete with other international events, such as Salt II, Middle East peace talks or the Iranian hostage crisis, for headlines in The Washington Post, WARC was an important conference; it involved the management of an international resource, the radio spectrum, that is vital to the social and economic welfare of every nation in the world. Although its tasks were primarily technical in character, WARC also excited political controversy because of its foreseen relevance to the "New World Information Order"--a concept much debated in recent years in forums such as the UN and UNESCO.

As you know, Mr. Chairman, before the WARC there was a great deal of speculation that WARC would provide a major opportunity for a debate, particularly between developed and developing countries, over such issues as free versus balanced flow of information, development assistance and other issues embraced by the "New World Information Order" dialogue. Such a debate did not materialize--a fact I am happy to report given the U.S. position that WARC was not an appropriate forum for it. Though the conference was not, of course, devoid of politics, it did devote itself to the specific tasks of revising radio spectrum allocations and associated regulations--tasks that were perhaps duller but which proved more constructive than a general philosophical debate over information orders, new or old, would have been.

That the Conference was successful cannot, I think, be doubted. Before the WARC it was common, in the U.S. at least, to depict the U.S. and other developed countries as defenders of the status

quo beleagured by a determined army of the Third World bent on radically reshaping the international communications order to their advantage and our discomfiture. If one accepted that view of the situation going into the WARC, one might be tempted to say that the actual outcome of the Conference was, in the words of Horatio Nelson, "a great and glorious victory" for the U.S. inasmuch as "the order" was not altered to our disadvantage. However, just as the image of the North-South warfare was exaggerated, claiming a "great and glorious victory" would be extravagant. It would also misleadingly suggest that WARC was comparable to the Battle of Trafalger in that one side's victory was another's loss. In fact such is not the case. If we were victors at WARC, we shared the distinction with all of the 154 members of the ITU. We were all winners.

In terms of U.S. objectives it is natural to try to assess the results of an enterprise such as this by constructing a simple score card of proposals won and lost. To do so, however, would be very misleading. For one thing, not all our proposals were of equal importance; some were vital, some of little consequence to basic national interests. More important in any event is the fact that proposals alone are not a full reflection of objectives, and it is ultimately the objectives, not the particular proposals, that are of real concern. Let me talk first about general U.S. objectives then outline some of the major specific objectives.

U.S. Objectives

U.S. objectives for WARC have been articulated in different phrases at different times. But in essence they have been consistently as follows:

1) To support the role of the ITU as the organization responsible for international spectrum allocation and management.

2) To maintain ITU processes which provide maximum flexibility and adaptability to changing needs.

3) To achieve international agreement on incremental changes in ITU regulations in order to enhance U.S. economic, social and national security interests.

4) To support incremental changes in allocations and related procedures which will accommodate the needs of other nations, consistent with our own essential requirements, while endeavoring to avoid or limit the impact of politically inspired efforts to restrict our use of the spectrum.

We believe these objectives were achieved at WARC. The ITU emerged as a strong and viable instrument for international agreement on radio spectrum regulation. The ITU processes were revised in a number of significant and useful ways to meet new needs--particularly the needs of developing countries--but adequate flexibility was maintained. Numerous changes in frequency allocations were made

but these were incremental in character, reflecting adjustments in light of changing requirements rather than any wholesale alteration of the allocations structure. Of special importance was the fact that the vast majority of decisions were supported by consensus. This does not imply that there was no controversy. Most notably there was throughout the Conference a tension between developed and developing countries. It was most evident in four major issues which I will touch on momentarily: allocations for the fixed satellite service; allocations for feeder links to serve the broadcasting satellite service; the agenda for a future space services planning conference; and reform of regulatory procedures for assigning HF frequencies to the fixed service.

There were a few times when it appeared that North-South differences might become so fundamental as to impair the future effectiveness of the ITU. It was not merely that there were important differences between the positions of developed and developing countries. The problem we perceived was an attitude on the part of some leaders of the developing countries that because they had the upper hand in terms of ultimate voting strength they did not have to recognize the needs of developed countries and seek reasonable compromise solutions.

Fortunately, this attitude did not prevail in the end. Most LDCs recognized that any attempt to impose unacceptable sacrifices on developed countries would be ultimately futile: the countries whose basic interests were threatened would refuse to accept the decision and in many cases such a refusal could effectively thwart its implementation by the ITU. Equally important the developed countries accepted the necessity for sacrifices to accommodate developing country interests. The end result is that, despite some disappointments, we came away with the belief that the Conference was politically successful; it left the ITU at least as strong as before. The ITU may even have been made stronger as a consequence of the mutual recognition of significant compromises between developed and developing countries.

Up to this point I have talked mostly about general political climate. I should mention briefly some of the specific U.S. objectives and how they were affected by the Conference.

The U.S. submitted over 900 different proposals to the Conference (out of a total of more than 15,000 submitted by the more than 140 countries participating) and it would take all morning just to recite them. The details are examined in a Delegation report to the Secretary of State, which will be sent to the Committee when it is completed. For the present I will simply sketch some of the allocation and regulatory items of greatest interest.

HF Broadcasting and Maritime Mobile

One of the most controversial areas of negotiation involved additional allocations in the high frequency range of the spectrum. From the standpoint of U.S. allocations objectives, we were able to

obtain only some of our needed allocations for Broadcasting. We were disappointed in not being able to obtain additional Broadcast allocations for the 6 and 7 MHz bands, which are essential to accommodate our expanding international broadcasting needs. One of our greatest concerns was that an effort will be made to develop a plan for HF broadcasting at a future conference based on inadequate allocations. We supported the decision to recommend a future planning conference. However, we entered a reservation to the effect that if such a Conference does not provide additional allocations for the Broadcasting Service at 6 and 7 MHz we reserve the right to broadcast in those bands notwithstanding the allocations.

For the Maritime Mobile Service we did not obtain sufficient allocations below 10 MHz generally to meet the expanding requirements. As a consequence we again entered a reservation in the final protocol which in essence reserves our right to satisfy our requirements in other bands if necessary.

Amateur

The amateur community has good reason to be pleased with the results of WARC. They received uncommon solicitude at the Conference. As a consequence, U.S. objectives to retain existing bands and to obtain some additional Amateur Service allocations throughout the spectrum were fully achieved.

UHF Mobile

The U.S. proposed relatively few changes in VHF and UHF allocations. The most important were proposals, for Region 2 only, for adding allocations in the Fixed and Mobile throughout most of the 470-960 MHz band (to be shared with Broadcasting up to 890 MHz). In one part of this band, 806-890 MHz, which is currently used for land mobile in the United States, we obtained a regional allocation; in the other instances we gained our objective by means of a special provision in footnotes to the table of allocations. The result, though not perhaps ideal, is entirely satisfactory from the standpoint of accommodating future growth of the Mobile Service within the United States. We did take a reservation on one point of detail: we refused to accept certain new coordination procedures that were attached to the footnote allocations.

Radionavigation Satellite

One of the major U.S. objectives was to provide allocations for a new satellite navigation system--the Navstar Global Positioning System. This objective was fully met.

Radiolocation

Throughout the Conference there was a persistent reluctance by developing countries to give adequate recognition to existing radar allocations throughout the spectrum. In a number of bands, for example, they insisted on adding Fixed Service allocations to share with existing radar allocations despite the repeated caution that the two services could not effectively share. The U.S. accordingly reserved the right to operate in those bands without guaranteeing the right of protection to other services.

A special concern of the U.S. was to maintain the present status of Radiolocation Service in the 3400-3600 MHz band now used by some of our most important military radar systems (most notably AWCS and Aegis). This band has long been shared with the Fixed Satellite Service (but only the Soviets have actually implemented the FSS). In order to facilitate use of the allocations--particularly for INTELSAT--a number of LDC's sought to reduce radiolocation to secondary status. This gave rise to an intense conflict. Fortunately a compromise, initiated by the U.S., was adopted at the 11th hour. It continues the primary status of radar but urges administrations to phase out of the band and to take practicable steps to protect the FSS.

Fixed Satellites

Though we did resist efforts to satisfy FSS requirements at the expense of radiolocation, the U.S., along with others, did seek additional accommodations for this service, primarily to meet INTELSAT requirements. On this general objective there was little dispute. The problem arose when a number of developing countries insisted that part of the accommodation required downgrading certain radiolocation allocations in the 3 GHz band used by the U.S. and UK for vital national and allied defense radars. Ultimately, however, a compromise formulated by the U.S. and a small group of Third World countries was accepted by consensus.

Feeder Links for Broadcast Satellites

All administrations sought at the Conference to identify suitable bands to serve as feeder links for the Broadcasting Satellite Service. As with the Fixed Satellite Service generally, this subject was extremely controversial, particularly because of Third World efforts to place the feeder links in the 14.5-15.35 GHz band to be shared on primary basis with terrestrial Fixed and Mobile services. The U.S. objected to sharing in this band, particularly in the upper portion, because of worldwide use of the present allocations for defense. We were joined in our opposition by a number of our allies and also by the USSR, which has other uses for this band that are technically incompatible with feeder links. After a prolonged and frequently bitter controversy a compromise was accepted which provided for use of several bands for uplinks at the option of individual administrations.

Fixed and Broadcast Satellites at 12 GHz

One of the most important issues for the U.S. involved a U.S. proposal to change existing allocations for the Broadcast and Fixed Satellite services at 12 GHz in Region 2--the Western Hemisphere. The 12 GHz band is especially important to the U.S. as the future frequency home for a number of specialized domestic satellite systems. Since 1977 the use of this band has been subject to the constraints of arc segmentation of the geostationary orbit, which resulted in severe limitation of the number of orbital positions available for either service. The 1979 WARC allocated separate frequency bands to each of the space services thereby eliminating the need for arc segmentation and permitting both fixed and broadcasting satellites to be located across the full visible arc of the geostationary orbit. A portion of the band, 12.1-12.3 was not divided; it will be divided in 1983 when the BSS portion is planned. U.S. objectives were met by this action. The division of the 12 GHz band will provide a major increase in the number of available orbital positions, as well as important flexibility for administrations to place their satellites in orbital positions which are technically and economically most efficient for serving their particular territories.

Mobile Satellites

The Mobile Satellite Service has been in use for several years; it has not been recognized as a separate service but operates in bands allocated to the Fixed Satellite Service. We had three main objectives for this service. First, we sought to gain recognition of the service. This was achieved. Second, we sought to have two exclusive space service allocations for it in the 7/8 GHz bands and 20-30 GHz (i.e. allocations not shared with terrestrial services). This was not fully achieved because of the insistence on sharing with terrestrial services. Third, we sought to obtain additional allocations for this service on both exclusive and shared basis. This was obtained on a shared basis. Overall, essential U.S. objectives were reasonably, though not fully, satisfied.

U.S. also sought additional allocations for the Maritime Mobile Satellite Service in order to accommodate the needs of INMARSAT. This objective was fully met.

Remote Sensing and Space Research

Among our most important objectives were proposals for additional microwave frequency allocations in the Earth Exploration and Space Research services to be used for remote sensing by future generations of Landsat and Seasat. These met with outstanding success. Virtually all of our remote sensing requirements were satisfied.

We also achieved our requirements for additional Space Research Service allocations for near earth and deep space scientific programs.

Meteorology

U.S. objectives for meteorological services were fully met. A U.S. proposal for expansion of the existing 1700 MHz allocation, to accommodate Tiros-N, was obtained, as was a new allocation at 18 GHz. Not least of our successes was defeat of ill-considered proposals by a member of LDC's to add fixed and mobile allocations in the 400 mhz band where they would interfere with meteorological aids which are critical elements in the World Weather Watch system.

Regulatory Procedures

With regard to general regulatory matters, the U.S. objective concerning the notification and registration of frequency assignments to space and terresterial services was that the existing regulations have proven adequate over the years, and should be maintained in essentially their present form. This objective was substantially achieved.

The article dealing with the notification and coordination of terrestrial stations was criticized by many developing countries as "first-come, first-served." This criticism was based on their difficulties in obtaining frequencies in the HF band for domestic communication--which is the only practical means of communications for many LDC administrations. This reaction was typified by an Algerian proposal that bands for the HF fixed service be split between developing and developed countries. This approach was unacceptable to a large number of administrations, both developed and developing. An acceptable compromise was worked out based both on proposals to the Conference, and proposals which surfaced during the Conference. The essential elements of this compromise were: removal of outdated HF assignments in the master frequency register; reclassification of remaining assignments according to needs and alternative means; finding new frequencies for HF fixed assignments displaced by allocation changes ("reaccommodation"); increased assistance by the IFRB to countries needing help in finding new frequencies, and in identifying interference.

Space Services Planning

As expected, there was very broad support among developing countries for planning of the geostationary arc and frequencies allocated for some space services, particularly the Fixed Satellite Service. However, there was no unanimous view among them as to what services or which particular frequencies should be planned. The U.S. supported planning of the feeder links and accepted the decision taken at the 1977 Broadcasting Satellite Conference to plan the Broadcasting Satellite Service at 12 GHz. (For Region 2 these will be planned in 1983, together with associated feeder links.) However, the U.S. and many other developed countries opposed planning of other space services, and specifically "planning" in the form of detailed orbital positions and frequency allotments to countries in the fashion of the 1977 Broadcasting Satellite Plan.

The developing countries supported planning out of fear that developed countries were preempting the orbital positions and frequencies and consequently that their future needs would not be met under present assignment procedures contained in the Radio Regulations. Developed countries opposed planning as unnecessary to insure equitable access to frequencies and space positions and as an inefficient way to utilize these resources.

The clash of these two views at the Conference was prolonged and intense. The focus of the debate was seemingly the scope of the agenda of a future space services "planning" conference. Though the U.S. did not in general support a priori planning, we did not object to a future conference to consider its feasibility and to consider various planning options. We argued therefore for an open-ended agenda, one which did not predetermine the outcome. The proponents of planning sought the opposite. The resolution which finally emerged calling for a future conference was not altogether to our liking in this respect. However, the agenda is sufficiently broad and open-ended that it will not foreclose us from presenting arguments and information against detailed frequency and orbit planning and for alternatives in the future.

Preparing for Future WARCS

International spectrum regulation will assume an increasingly central role in the general field of international communications, the importance of which is itself receiving greater recognition. In saying this I set aside the general dialogue over the so-called New World Information Order. I regard that debate presently as more rhetorical than substantive. However, beneath the rhetorical debate the advancement of communications both within and among nations is a matter of fundamental importance to the future of any world order.

If this assessment is correct it implies a somewhat greater recognition on the part of the U.S. communications policy makers to its international aspects. This is not limited to electronic communications but I think there can be no doubt that electronic communications is, and will increasingly be in the future, the dominant vehicle for international communications. This implies an important role for international radio spectrum management.

Some of the major issues at WARC-79 were postponed to a series of specialized and regional WARCs to be held throughout the 80's. The United States favored most of these conferences. Such specialized conferences are now new. However, the scheduling of a series of such conferences by a general WARC is unique, setting out a new pattern of ITU activitiy. It may be that another general WARC authorized to make decisions on the entire spectrum will not be convened for the indefinite future, if ever. In any case, the pattern for at least the next decade will be a continuing series of smaller conferences, dealing with specific parts of the spectrum where technological and other changes mandate revision of the radio regulations.

What this means is that we will not be dealing with a series of discrete conferences, separate one from the other. The subjects may be different, but they will be linked in effect by what will be, for all intents and purposes, a continuing negotiation. U.S. preparations for such conferences will have to be a continuing effort. This will require a level of coordination which will assure that preparations recognize the linkages between the series of conferences, at both the technical and political/economic levels.

For future conferences, I do not propose any substantial changes in the basic approach taken in preparation for 1979. It has been suggested from time to time that the U.S. should centralize responsibility for spectrum management policy in a single agency in lieu of the present bifurcated arrangement in which responsibility is shared by the FCC and NTIA. This proposal has been made to "rationalize" domestic more than international policy making, but some have supposed that such a central direction would be to the benefit of both. The issue is too large and complex to be dealt with here; a few observations must suffice.

Either as a matter of domestic or international policy organization I think the case for such a sweeping reorganization is very weak. As a matter of domestic policy organization, the present dual responsibility of FCC and NTIA for domestic spectrum management represents an underlying division in the domestic regulatory scheme for all electronic communications -- the FCC having responsibility for all nonfederal communications and the President having responsibility for all federal agency communications. In my view it would be difficult (though not impossible) to alter spectrum management authority without altering the basic regulatory scheme. There is no substantial support for doing the latter. As long as the domestic spectrum management structure remains divided major changes in the structure of international spectrum management are not practicable. International organization must inevitably reflect domestic policy organization. While the State Department rightfully has ultimate authority for negotiating foreign policy -- including international communications policy -- it cannot exercise that authority without drawing on the FCC and NTIA for a determination of radio spectrum requirements.

This should not be a matter of great concern. Though the system of divided responsibility makes decision making more complex and often less clear cut, such difficulties are inherent in the nature of the issues to be resolved. It is, for example, naive to think that most of the present conflicts among different policy objectives -- which generally reflect conflicts among user or public interest demands for the spectrum -- can be readily resolved simply by vesting a single decision maker with final authority. Many of the most difficult conflicts that had to be resolved in developing a U.S. position for WARC involved conflicts within the respective sectors of either the FCC or NTIA and not conflicts between those agencies. Consolidating their responsibilities would have had no effect on those conflicts. Moreover, in those cases where conflicts between the FCC and NTIA sectors did develop

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most were resolved by effective compromise. It is worth emphasizing at this point that other countries which generally have a more unified organization for spectrum management nevertheless pursue a process of internal conflict resolution by compromise that is not much different from ours.

Of course, it is necessary to have some locus of final decision making; there must be some place, where in Truman's words, the "buck stops." So far as international policy is concerned the answer seems reasonably clear: the Secretary of State speaking for the President has, and must retain, the ultimate responsibility.

The State Department's role extends beyond mere final review and approval of international policy positions. It also has a role to play in shaping policy positions--to ensure that international policy concerns are properly integrated into the policy making process from its inception and not merely layered on top of it at the point of final decision.

An important element of future preparation will be developing appropriate linkages with other elements of international communications policy. Obviously radio spectrum use and management does not stand apart from other aspects of international communications and communications policy. Despite the highly specialized technical character of radio spectrum management which sets it apart from, say, UN or UNESCO debates over free-versus-balanced-flow of information, or development assistance programs, the issues are often related.

As a first step some permanent mechanism for intra-Departmental and interagency coordination is appropriate. Such a mechanism was developed in 1978 as a first attempt to bring together some of the major strands of international communications policy. Thereafter coordination was pursued more or less informally as part of the WARC-79 preparations. For the future, however, policy review and development ought not to be dominated by some specific major event such as WARC. The "big event" is probably of diminishing importance in international diplomacy. The process of continuing negotiations through a series of conferences has become predominant in almost all aspects of international affairs, including international communications policy. It follows that too great an emphasis on single events, such as future WARCs, as a focal point for policy coordination could lead to a distorted perspective on policy issues and objectives.

As to what organizational structure might be needed to carry out the future role of coordinating international communications policy I have no specific recommendations. I do not think a large new office is required to handle the task, but the responsibility must be clearly recognized and given stature commensurate with its high importance.

Mr. Chairman that completes my formal statement. I will be happy to respond to any questions you may have.

Mr. FASCELL. Well, let's hear from the rest of the gentlemen who are here, and see if they want to add anything to what you have already said.

Shall we start with you, Mr. Shrum?

STATEMENT OF RICHARD E. SHRUM, OFFICE OF INTERNATIONAL COMMUNICATIONS POLICY, BUREAU OF ECONOMIC AND BUSINESS AFFAIRS, DEPARTMENT OF STATE

Mr. SHRUM. Thank you, Mr. Chairman. It is a pleasure to be here today to give my informal views, and I apologize in advance if my brief comments have some duplication with the remarks made by Ambassador Robinson.

I believe that the 1979 WARC was successful in carrying out its objectives. The revised regulations and allocation table will provide a sound technical and regulatory framework for the expansion of domestic and international communications while maintaining a significant degree of order in the use of the radio spectrum.

With the exception of the Conference chairmanship, I feel there was a general absence of political debate contrary to many predictions. Nearly all decisions were resolved in the traditional ITU manner; that is, understanding and cooperation among the delegations, leading to consensus and general agreement to the final acts.

The role of the ITU as the international agency responsible for regulation and management of the spectrum and for discussing global telecommunications needs and problems, I feel, was strengthened.

Almost all of the specific U.S. objectives were obtained either in whole or in substantial part. Only a small handful of the hundreds of particular decisions were unacceptable to the United States causing us to submit appropriate reservations for the final protocol.

I believe that the U.S. success at this Conference was largely the result of a substantial, well coordinated national program carried out in the several years prior to the Conference and of the high degree of excellence and competence of the U.S. delegation and the support staff that we had both in Geneva and here at home.

The Department plans to send the final acts to the President about mid-January of 1981. We expect them to be transmitted to the Senate in late February or March of next year with a strong recommendation for ratification prior to the entry into force date of January 1, 1982.

Concerning the future, Ambassador Robinson has already noted that a series of future conferences was recommended by the 1979 Conference. The program of upcoming conferences is very ambitious and is going to place a heavy burden on all administrations, not only the United States, but particularly on developing countries, to prepare for this heavy schedule.

I think it is fair to predict that the United States will participate in all the world conferences and the appropriate regional conferences. We must serve and protect our national interests at these conferences and we have a strong commitment to international agreement and harmony in the use of the frequency spectrum and the geostationary orbit.

Finally, I would like to speak briefly about the manner in which the United States prepared for the Radio Conference and will prepare for future conferences. I feel that the preparation and coordination for the 1979 Radio Conference was handled effectively and efficiently by the existing Federal Government structure that we have for the development of international communications policy. This structure was augmented in several ways, some of which include the following:

At a rather early date we designated Ambassador Robinson to be Chairman of the delegation. This was almost 2 years in advance of the Conference. At about the same time, we established an initial delegation group, consisting of representatives from various Government agencies, to assist Ambassador Robinson. Approximately 18 months before the Conference, the State Department established a public advisory committee reporting to Ambassador Robinson. The Department made a temporary increase in its staff to directly support the delegation and the Department in preparing for the Conference. I think one final very important step we took was to establish a senior-level policy review and steering group from the key agencies involved in the Conference preparations.

With respect to the future, I believe that our national preparation and coordination for the upcoming conferences can be handled in a similar manner by the existing structure. Earlier this year the Department established a senior interagency group on international communications policy to provide a regular forum for discussion and consideration of relevant issues. This group is chaired by Mr. Nimetz, the Under Secretary for Security Assistance, Science and Technology. It includes high level representation from NTIA, FCC, the Department of Defense, International Communications Agency, OMB, the White House, the National Security Council, and the Office of Science and Technology Policy.

The Department also has or will soon have an individual coordinating committees to provide steering and oversight in our preparations for the specific conferences that are coming up in the next few years.

Mr. FASCELL. Are they going to be part of that interagency group or are they separate steering committees?

Mr. SHRUM. They will be under the umbrella of the interagency group. That is, they will report to the interagency group on a regular basis.

We are continuing to examine our mechanism for the development of international communications policy in the Department and in the United States in general. At the present time I believe that the existing structure is quite satisfactory and adequate.

In the Department, policy is coordinated by Under Secretary Nimetz. Various offices participate in the development of policy, examining the policy issues from several different angles—the angle of legal affairs and matters—with respect to international organizations, with respect to general science and technology interests and, of course, with respect to spectrum management and economic factors.

I personally believe that this is a better approach than isolating communications policy in a single entity or office within the

Department. We have a number of people looking at the policy issues from different perspectives and contributing to the development of our policy.

Thank you, Mr. Chairman.

Mr. FASCELL. Which individual in the Department of State has responsibility now?

Mr. SHRUM. Under Secretary Nimetz.

Mr. FASCELL. I thought you said he was simply a coordinator?

Mr. SHRUM. I should expand that by saying that he will——

Mr. FASCELL. If something goes wrong, does the monkey get hung on him or you or Mr. Robinson?

Mr. SHRUM. Not Mr. Robinson.

Within the Department, Under Secretary Nimetz is the focal point for the development, coordination, and approval, of international communications policy.

Mr. FASCELL. If something goes wrong with the next regional conference, it is his fault?

Mr. SHRUM. Yes, I would say that it would be his fault.

Mr. FASCELL. OK. That is far enough. Let's go someplace else.

I just want to get it straight. It is very unusual to find out who is responsible for anything.

Mr. Dizard?

STATEMENT OF WILSON DIZARD, SENIOR POLICY ADVISER FOR INTERNATIONAL COMMUNICATIONS POLICY, INTERNATIONAL COMMUNICATION AGENCY

Mr. DIZARD. In your letter of invitation you discussed two subjects. One is the results of the WARC itself. I think Mr. Robinson, in his summary of his prepared statement, expanded on that. What I would like to talk about is the second reason for your calling us here. That is the results of the somewhat different approaches we took in planning for WARC, a project that turned out—as Mr. Robinson suggested—to be quite successful.

Perhaps WARC was a unique event requiring approaches that cannot be transferred to other events.

On the other hand, as I believe, there are insights and very specific operational lessons to be learned from the way in which we carried out this project. Neither I nor my agency, the International Communication Agency, have any specific proposal in this area but we do see some lessons to be learned.

As you know, ICA's new mandate makes specific provision for our participation in the international communications policy planning process.

Without suggesting any definite organizational arrangements, I would like to outline several general principles that we think should be considered as we look at this problem.

The first is the need to emphasize the State Department's role as the lead agency in international communications policy. This may seem to belabor the obvious. However, in the past there have been times when this fact has been overlooked by inadvertence or otherwise in some of our overseas dealings in this area.

As one who spent 35 years in the Foreign Service, many of them in the Department, I wouldn't want to claim omnipotence for it. However, its lead role mandate is very clear.

Moreover, it is the only Federal agency with the resources and expertise to handle our complex relations with over 150 countries, relations in which communications is only a small part, an issue which has to be fitted into a lot of other issues as we deal with these countries bilaterally, regionally, and through international organizations.

The second guideline follows from this observation about State's lead role. It involves the need for assuring continued close coordination not only on individual issues involving State and other agencies in this field, but also coordination on the relationship between these issues.

That is rather textbook stuff. Unfortunately, the solutions tend to be textbook solutions involving complicated charts. I go back to what the first Secretary of State I worked for, Dean Acheson said. He used to be very impatient with the machinery of policy, policy machinery.

His idea was there is no such thing as a machine where you put in facts and figures at one end and nice neat solutions come out the other.

He insisted that policymaking was more akin to tending a garden, cultivating some fairly fragile flowers. You needed the right seeds and other ingredients, but most of all you needed a sense of patience and an eye for longer term results.

He used to say, "This doesn't mean pulling the flowers up by the roots every few weeks to see how they are doing."

I think his garden analogy is one we should keep in mind.

Mr. FASCELL. Did he include in that analogy somebody having a hoe in his hand killing the weeds?

Mr. DIZARD. He never got into the specifics.

At any rate, what we are talking about is a complicated subject which cuts across many individual issues, and the work of many agencies.

The question is how we do this efficiently with particular attention to anticipating and preparing for the many changes that we can expect in this area in the next decade.

This won't come easy, but it will be easier if, under the State Department's direction, we can continue to improve our coordinating practices, not only with individual communications issues, but in seeing the connection between them. It is on this latter point I personally believe that perhaps more attention is needed.

I believe that our WARC experience is very relevant to this process in the sense that at WARC we were dealing with a conference with a specific agenda. However, we realized early on, as Dick Shrum pointed out, that WARC issues went well beyond the narrow technical bounds that had defined our approach to previous conferences of this sort.

In the international environment, communications—as in many other things—is changing; and among other attributes, it is much more sensitive to political and social factors.

The new world information order, that kind of development.

There has been a greater awareness in the political, economic, and cultural implications of the technical decisions taken at the WARC. Thanks in part to the concerns expressed by this committee, the Department organized its WARC planning to take these changes into

account. It was a 5-year process involving close coordination with other agencies and with the private sector. This was aided by the strong mandate given to the Deputy Secretary and to the chairman of the delegation.

Clearly, our attention had to be primarily on preparing proposals related directly to the WARC technical agenda. But we also maintained close coordination on political and economic issues related to WARC within the Department and with other relevant agencies.

Incidentally, by the time we got to Geneva, we had prepared position papers on 27 separate nontechnical issues related to WARC.

I am not suggesting that we replicate this particular pattern with every communications issue we deal with in the future. WARC dealt with an especially broad subject, with the entire range of radio communications issues. There are few other issues in the communications field that are as comprehensive. I agree with Glen Robinson; we should not organize our policy planning in terms of big events like WARC. The situation now is that we are in for a period of continuing negotiations on a wide range of communications issues. Some of these will deal with future ITU conferences. Other issues involve UNESCO, technology assistance, data flow problems, and other subjects. But they are connected. It is only within the last few years that we have begun to understand this and act upon it. If we continue to follow this course and improve our capabilities, the results will be a more coherent national strategy in international communications.

So my main points are the need to strengthen the State Department's role as the lead agency, as needed, in ways that assure more coordination in meeting our strategic needs.

The final point I want to make relates to these other two. It deals specifically with the role of my agency, the International Communication Agency.

This committee was strongly favorable to the administration's reorganization plan which resulted in the creation of ICA with a new mandate 2 years ago. Part of this mandate specifically identifies the role for the Agency in assisting in comprehensive communications policy development and execution.

As you know, another part of our mandate stresses the Agency's role in promoting dialog on significant issues with audiences abroad. This, of course, is the essence of international communications at its most effective level. Whether the issue is radiofrequencies, data flow, we are dealing with the ways in which we can reach out and deal with each other.

It is—for want of a better cliche—the human factor. When we are insensitive to it and slight it, we can undo a lot of good work.

Moreover, there are no formulas for identifying whether we are successful. It is an art, not a science.

My former director, Ed Murrow, once said that no cash register ever rings when we do something right in our contacts with people abroad, but the impact is nonetheless real and important.

ICA can bring this social and cultural perspective to communications policy. We can provide expertise in people and resources. Here, at the Washington level, we can play a continuing role in the WARC policy process.

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In our Office of International Communications Policy, we participate in most of the interagency working groups dealing with current issues.

We can also provide support to our posts abroad, explaining our policies. In summary, Mr. Chairman, ICA is committed under its new mandate to support national policy. For this reason, we welcome the committee's examination of ways in which we can all contribute to more effective policies and actions in the international communications field.

Thank you, Mr. Chairman.

Mr. FASCELL. Mr. Shrum, did you have a full statement you had summarized that you would like to put in the record? Was everything said that you wanted to say?

Mr. SHRUM. Mr. Chairman, I was just reading from some notes I had made.

Mr. FASCELL. How about you, Mr. Schaefer? Do you have a statement you want to put in the record and summarize?

STATEMENT OF KALMANN SCHAEFER, FOREIGN AFFAIRS ADVISER, FEDERAL COMMUNICATIONS COMMISSION

Mr. SCHAEFER. I have a statement but not for the record, I am prepared to share it with the committee. I don't have a written statement.

Mr. FASCELL. I see. Why don't you go ahead? We need to hear from the FCC.

Mr. SCHAEFER. OK.

Mr. FASCELL. We have been hearing about everything that was done. How about telling us what business we wrote about?

Mr. SCHAEFER. I will try.

Thank you, Mr. Chairman. I am pleased to be here and share some of my views with you.

I would like to emphasize that these are my personal views and do not necessarily conform with those of the Commission.

Mr. FASCELL. Disclaimer noted.

Mr. SCHAEFER. Thank you.

As you know, international communications policies differ greatly from country to country and are deeply rooted in the political and economic systems of each and reflect both historical and cultural values, as Mr. Dizard indicated.

Given the diversity which this implies, I believe that it was a great achievement for international telecommunications officials to have made WARC 1979 a success. Some technical and political difficulties were foreseen; and I was impressed by the minimal political infusion into the proceedings.

WARC 1979 was an international conference among sovereign nations. This basic fact imparted a special character to the proceeding. It means that there were no winners or losers, since there are no real means of enforcing the results of the Conference.

Each of the attending members is sovereign and the ITU has no authority to compel a nation to do anything. What must be relied upon is the collective esteem for the agreements reached at the Conference.

To the extent that any individual country can effect this international legislative process, it must rely heavily on the soundness of its

proposals in the eyes of the international community and the ability to engage in meaningful dialog and convince others of their equity.

The reason WARC 1979 was a success, in my view, is that those who attended were prepared to strike a balance between national wants and needs and international harmony.

They recognized the differences between national telecommunication needs and the international regulatory framework within which they could meet these needs.

Where difficulties arose was in the distributive aspects of the Conference. Here is where national sovereignty interjected itself in the proceedings. Administrations were concerned that the distribution of frequencies be done in an equitable manner. It was the convergence between these two elements, and striking a balance between them that resulted in mutual accommodation.

As was indicated, perhaps WARC 1979 was not the most important international event of this decade. Vital U.S. interests were not jeopardized, but if there is a point to be made as a result of this Conference, it is that international telecommunications will play an increasingly important role in the area of international affairs.

Moreover, that the United States has to be prepared to deal with the international telecommunications issues of tomorrow in a more cohesive and efficient manner.

The forthcoming conferences, to which reference was made earlier, are important. Indeed, some of them may be found to be more important than WARC 1979 and more critical to national needs.

For the United States to adequately prepare itself for these conferences, we must answer the threshold question; namely, how can the United States most effectively prepare itself domestically and present its case internationally in the U.N. system?

Gone are the days when the United States could assume a posture where we could independently implement a domestic policy without due regard to international implications.

Indeed, the inverse is also true.

I believe the Federal Government must establish a structure coupled with an efficient process which will be responsible for the development of a continuous, long-term international telecommunications policy.

At the moment, policymaking is fragmented among various Government agencies. Although the existing structure has been adequate in the past, indeed, judging by the results of WARC 1979, one can be satisfied with its makeup.

Moreover, the various FCC notices of inquiry processes and public committee's mechanisms have had an important impact in shaping U.S. proposals, but I believe that that may not be adequate for the future.

It may not be the most efficient manner in which we should be organized to meet the challenges of tomorrow. What the United States needs is to develop a much broader perspective of what is occurring in the world. This includes an understanding of where international telecommunications institutional arrangements are coming from and where they are likely to be going, understanding the interrelationship between and within the various international telecommunications fora and the impact these have on U.S. telecommunications policies.

For example, there are 10 major international telecommunications fora; each has its own subsidiary structure. The ITU alone has some

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75 different committees, study groups, and interim working parties, each of which is in a position to have a significant impact on international telecommunications issues, not to speak of the U.N., UNESCO, UNDP and other international fora.

What I am suggesting, Mr. Chairman, is that it requires a cognizance of contemporary events in a multitude of international fora in which telecommunications issues are appearing. This will call for innovative approaches and an efficient and quickly responsive structure and most importantly, perhaps, a quick and efficient decisionmaking process.

At this time I do not have easy answers as to how we should organize ourselves and how this may be best accomplished, but I am of the firm view that an analysis in this direction should commence at the earliest possible time with a view of finding some workable options.

Thank you, Mr. Chairman.

Mr. FASCELL. Thank you very much.

Mr. Torak?

STATEMENT OF WILLIAM R. TORAK, INTERNATIONAL AND OPERATIONS DIVISION, OFFICE OF SCIENCE AND TECHNOLOGY, FEDERAL COMMUNICATIONS COMMISSION

Mr. TORAK. Thank you, Mr. Chairman.

I would also like the record to show that my comments are personal and do not represent the views or policies of the Commission and in that vein——

Mr. FASCELL. What is wrong with the Commission?

Mr. TORAK. Not a thing.

Mr. FASCELL. Why does everybody not want to bind them to anything?

Mr. TORAK. To demonstrate my comments—demonstrate my view——

Mr. MICA. Let me just ask: Did they say that to you?

Mr. TORAK. Since I am going to disagree with my colleague, I think it is obvious it is not a unified Commission view.

Very quickly, when you look at the outcome of the Conference, you have heard it has been successful. I share that view.

One of our major objectives was to have flexibility in the international radio regulations so we could make domestic decisions both in the Commission and NTIA to satisfy future domestic requirements.

I believe we achieved that.

When you look at the problems of WARC 1979, the vast majority we were aware of prior to going into the Conference. This, in my opinion, was the result of an extensive series of bilateral trips which were taken by members of the delegation.

Those trips to 40 or 50 different countries demonstrated the problems we would face at that Conference.

In my opinion, we were not surprised.

With respect to the method of presentation, I fully endorse the current system which, in my opinion, is a check-and-balance type of negotiation. I believe that if a requirement cannot stand up to domestic scrutiny between the Commission, State Department, and NTIA,

it will not stand up in the international fora. I believe it is very healthy to have the disagreements, meetings between the organizations, and come to a common understanding of what the U.S. requirements essentially are.

I believe that the entities have to be close to the users of radio in order to understand their needs, and I think that is successful both at the FCC and the NTIA.

To talk about a new organization or centralizing international telecommunications, in my opinion would not be in the best interest of the United States. I think there is a chance that such an organization would be dominated by certain requirements or sections of the Government, and I think it would take away the check-and-balance system which I spoke of.

With respect to the basic policy structure which currently exists, I think the most important thing is to augment the resources which currently exist in all three organizations—personnel, travel funds, which are vitally needed.

So I think it comes down to if you ask whether or not we should enhance resources and place more effort on international conferences, I think yes, there is no question in my opinion, that is necessary.

But, if you are talking about a major restructuring of the current system or a new organization, in my opinion the answer would be "no."

Thank you, Mr. Chairman.

Mr. FASCELL. Well, let's hear from Commerce, NTIA?

STATEMENT OF SAMUEL E. PROBST, DEPUTY ASSOCIATE ADMINISTRATOR FOR SPECTRUM, NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION

Mr. PROBST. Thank you, Mr. Chairman. It is a real pleasure to be here today.

My comments will be brief.

There are a few things I would like to add to what has been said, some reinforcing of what has already been said and perhaps some that give a slightly different slant.

First, I would like to reemphasize something that Glen said in his remarks which is very important, an unfortunately, it is frequently disregarded by people who aren't involved in the ITU process.

That is, there is a tendency on the part of many people to look at this as a zero sum game wherein successes on one side must be equated to losses or lack of success on the other side.

That simply is not a correct characterization of the situation.

The function of the ITU basically is to draw up regulations and allocate the frequency spectrum in a manner so that the radio services needed by every nation in the world can operate compatibly, avoiding unnecessary interference between systems, so when a successful outcome of a conference like WARC 1979 is reached—and it was indeed reached in this case—it accrues to the benefit of all members of the ITU. It doesn't represent losses on one side and wins on the other.

The point also needs to be stressed that the regulations don't, in their all-encompassing form, slice resources up and distribute them to administrations.

What it does is express an agreement among the administration as to how that resource shall be sliced up and used for telecommunications service.

How much should be devoted to broadcasting, how much to radiolocation, how much to maritime mobile communications, et cetera.

That is why one of our principal stresses in preparing our inputs to this Conference was to try to evaluate the telecommunications requirements of the entire world. To the extent to which our U.S. proposals were successful at the Conference—and they were extremely successful—it reflects that we were successful in reflecting the genuine needs of the world.

Our proposals were perceived by the other nations of the world as meeting their requirements, by and large.

Stressing that point that the individual provisions in the radio regulations are quite technical in nature, the bandwidth that is to be set aside for particular radio service is largely a function of the level of technology, how heavily mankind depends on that particular radio service.

Take, for example, electronic aids to navigation. As worldwide air travel increases, we must have adequate spectrum to provide for air travel navigation. This is perceived commonly by the nations of the world. It is a very technical matter.

While there is no question that our technical proposals must reflect the national policy position, I think it is imperative that those people who are, as Bill Torak said, close to and understand deeply the real requirements of the users are the people who have to assemble and evaluate the requirements.

We do have very effective mechanisms for making sure, however, as we move along, that these assembled requirements do reflect national policy. While it is clearly the State Department's ultimate responsibility to represent us in international fora like the ITU—and no one questions that responsibility—it is also true that the State Department participates from the outset as one of the Federal Government agencies that works through the Interdepartment Radio Advisory Committee along with the liaison participation of the Federal Communications Commission to prepare these proposals.

They have adequate opportunity from the outset to make sure that the proposals we are developing are not in violation of national policy. I would stress again, for example, that one of the very important conferences that is coming up that was mandated by WARC 1979 will be a conference to look at the world's requirements for international high frequency broadcasting.

This is the kind of broadcasting which, in the United States, is represented primarily by the Voice of America. Although the Commission does have some licensees—they tend to be largely religious organizations—the bulk of international broadcasting in the United States is conducted by the Voice of America.

ICA, Dizard's Agency, who is responsible for our basic foreign policies in this area, along with the State Department, will be the major participant in our preparatory effort under an ad hoc committee of the interdepartment radio advisory committee to see to it that our preparations for that conference also take into account the national

policies, even though the proposals themselves will be quite technical, dealing with how much power should an international broadcasting transmitter be allowed; how many separate frequencies and separate bands should be allowed to carry the same program material to the same target area; how much directivity should be provided in international broadcast antennas so as to avoid other interferences in the same spectra to other parts of the world, et cetera.

Having said all that, I think it is quite obvious that my viewpoint is that under our present structure, so long as we domestically are structured as we are today, under the Communications Act of 1934, as amended, the responsibility is clear:

The Federal Communications Commission manages the uses of the radio spectrum in the United States for all other than the Federal Government. NTIA, under the existing delegated authority from the President, manages all the uses by the Federal Government. We represent the users; we understand their problems, their needs, their requirements, and we jointly prepare the technical proposals, but with, at the same time and all the time, the participation by those agencies who are responsible for policy determination and, of course, NTIA has a large role in international policy as well.

The Director of NTIA is the principal telecommunications policy adviser to the President.

Someday, as our economy becomes ever more dependent, as it always does, on telecommunications, we may restructure in the United States to more parallel the lines of other administrations who normally have a single departmental level organization like a Department of Telecommunications or something like that.

If and when that day should ever come, of course, that agency, again along with the policy responsible agency, should exercise this preparatory function on behalf of the United States.

So long as we are structured as we are today—and I am not proposing we should change that structure—I feel it is imperative that the FCC, NTIA, with the participation of the Federal agencies and the public on the FCC side, jointly prepare the technical proposals with constant oversight on policy matters and ultimately present our proposals to the State Department for final policy review and submission to the Conference.

It seems to me that the mechanism is adequate. It does work well. However, I would also like to stress a point that Mr. Torak raised: It is difficult in today's tight budget environment to get the resources that are required.

We, the Commission, and State, all three of us, could stand at the working level more resources for international renegotiation. Our trips, as Mr. Torak mentioned, were invaluable in the case of WARC 1979. In today's tight travel budget, it is difficult to see how we will be able to maintain that level of a dialog with other administrations.

Except for that, a plea for support in terms of resources, I would have no specific recommendations to make for altering the present structure at this time.

Thank you, sir.

Mr. FASCELL. Is the interagency radio advisory group, or whatever you call it, the same thing as this other one? One is technical; one is policy?

Mr. PROBST. The interdepartment radio advisory committee is an interdepartmental advisory committee consisting of those 19 agencies that have the principal responsibility, chaired by NTIA, with full participation by the FCC, representing the entire nongovernmental interest.

It is the mechanism we use to prepare the technical proposals.

Mr. FASCELL. I just wanted to be sure. I thought that was it. Yes?

Mr. JACOBS. I am George Jacobs of the Board for International Broadcasting. I would like to offer a correction for the record.

The U.S. Government's responsibility is shared equally between the Voice of America and Radio Free Europe.

Mr. PROBST. If I could add a point, yes, he is quite right. BIB carries a very major role. BIB is also active in participating in our ad hoc effort for this broadcasting conference I referred to. We hope they will continue to be participants.

Mr. FASCELL. Mr. Urbany.

STATEMENT OF FRANCIS S. URBANY, MANAGER, INTERNATIONAL COMMUNICATIONS, NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION

Mr. URBANY. Thank you. Mr. Chairman.

If you would hand me down your broom, I will try to sweep up the crumbs that have been left to me after hearing my six colleagues here.

Sometimes in coming before a group such as this, one wonders whether talking about an esoteric area such as radio spectrum planning will have some meaning.

I think Congressman Mica—when I heard his bellboy go off, it brought home in a real way what this Conference was about. Some of the frequency use we were negotiating involved that part of the spectrum used by paging systems. So it is just a small point but brings the issue home in a meaningful way.

If my colleagues and you, sir will tolerate it, I have a few final comments I might add here in the form of opening comments.

My comments will be from the perspective as a vice chairman of the WARC 1979 delegation who had a principal role in dealing with the regulatory aspects of this Conference. You heard how the Conference provides a radio spectrum for the use of various services.

There are regulations that permit access to those services, sort of the ground rules. Radio frequencies are gregarious little fellows. They don't know how to stay at home. Unless there are well ordered rules of use, they tend to interfere with one another.

As Mr. Probst said, the whole basis of the existing regulatory structure is to provide use of a scarce resource, free from interference.

The Conference that we are discussing here was quite difficult.

In many respects some of the issues lined up on the question of developing country interests versus developed country interests. In terms of the regulations, in terms of the procedures, in terms of how one gains access to this scarce resource, the U.S. view was that the existing procedures had tended to work well. We think that people from countries requiring access have had access to the spectrum.

We think no one has been denied either terrestrial or space communication frequencies.

It became clear, however, in the context of the extensive bilateral and multilateral discussions we had prior to the Conference that the perceptions of the developing countries were quite different.

They perceived the regulations to be quite complex, and, given that they have a very limited domestic infrastructure for managing the resource, that created a burden in their mind.

Also, they were concerned about aspects of the frequency procedures which they characterized as first come, first served.

You get there first, you register your frequency; the later comer has to work around that. That is true to some extent, but against that context, no one has been denied and no one has been unable to get frequencies.

I think also one needs to look at this conference in the context of its timing. It occurred in 1979, the last conference of this type was 1959.

Since that time, since 1959, many of the colonial countries had come to independence, so there was a general feeling among many of the developing countries that they weren't, as it were, present at the creation when these procedures and ground rules were developed. So they came to the Conference intending to make some impact, to bring about a change, to bring about a restructuring or a readjustment whereby they felt that their interests were adequately provided for.

They were intent on taking something tangible home to show they had been at the Conference. As I say, the Conference was difficult, but we were able to conciliate those differences.

Why was that? In my mind, I think it was because of a recognition alluded to in an earlier comment about sovereign countries coming together and making tradeoffs between domestic and international requirements; that there was a recognition that if the developed countries and the developing countries could not get along to define a balance, it would do mutual disservice to all participants.

In fact, it was to our mutual self-interest to find an accommodation where each of the contenders, each of the parties, could find a way of reconciling differences, so I think, given that recognition, it was necessary to find an accommodation, coupled with the fact that there had been extensive preparation for this Conference.

The United States engaged in numerous bilateral and numerous multilateral discussions prior to the Conference. I think this had a very good effect at the Conference because the issues by that time weren't new. There were no surprises in that context, and perhaps more importantly, we knew our counterparts and they knew us.

We were able to engage in a series of dialogs, and out of a feeling of experience and confidence based upon previous contact and discussion, it bred an atmosphere, an environment where difficult problems were solved.

WARC 1979, I think, left us quite a legacy for the future.

In some of the terms that have been talked about here this morning, I think the way the United States prepared for that Conference was effective. You have heard about the IRAC and the shared responsibili-

ties for conference preparation between the three agencies represented around this table.

I think as a result of the extensive preparation leading up to that Conference, we have developed a cadre of experienced personnel that will carry forward into future conferences.

I think the WARC 1979 represented a watershed occasion in the sense that the United States was able to reach out and talk and establish contact with many people in the communications field, our counterparts.

That was not the situation prior to that time. The squeaky hinge gets the oil. Telecommunications has worked relatively well, so some of our contacts or some of the relationships with foreign communication counterparts were not particularly extensive prior to 1979.

I think that has changed. I think it is important to maintain that dialog, that channel of communications, if you will. That is part of the legacy of WARC 1979, but it has also left a lot of work.

You have heard about the future conferences. There are numerous of them. We have now simultaneously five radio conferences under preparation running a time frame from 1981 through 1984.

Some of these conferences will have second sessions. So I might at this point share a view expressed by some of my colleagues here, that additional resources are required to pepare for these conferences.

I think in this case "more is better" in the sense that we have had an extensive amount of work created by WARC 1979.

I know you are interested in the question of how to improve international communications policy generally. I have some observations.

I think Glen Robinson was quite correct and others here, that the conferences we have been talking about, radio conferences, represent a continuum of events. They are not isolated. They are interdependent. Some of the issues at the various conferences are essentially variations on a theme.

We may change the radio service under considerstion at a particular conference, but a number of the issues are the same and also a number of the participants, the people, are the same.

We finished with WARC 1979 and just this past week we had bilateral discussions with the Canadians, with some of the same people working on a different subject matter.

It does seem to me, however, that there needs to be some bridge, some linkage, with respect to the various aspects of communications that are emerging.

In the radio area, there has been established for a long time a very effective mechanism for interchange of ideas, for discussion, and for debate.

That is the IRAC, where the State Department, the FCC, and Federal Government agencies all participate. That is sort of one dimensional in a sense. It deals with the regulation and use of the radio spectrum.

It doesn't deal necessarily with, say, the software content of how the spectrum is actually used.

I think probably the time has come to focus very carefully on how a bridge between the various uses to which communications are put can be achieved.

I think, absent a Department of Communications or something of that nature, the system we have works rather well.

I do think, though, probably there is some room for improved coordination. We have heard about an interagency coordination committee that has been created—and Mr. Shrum enumerated the agencies which participate. It may be that something like an IRAC for the broad range of communications issues might be structured and organized, and by that I mean an organization, a coordinating group, that meets systematically.

IRAC meets every 2 weeks. Maybe that would wear one out in the broader context of the whole range of communication issues. An IRAC mechanism does however permit an opportunity for issues to be discussed, for points of view to be expressed, and for positions to be arrived at. I don't think that policy, like Venus, springs full blown.

It evolves over a period of time. It takes numerous participants, numerous points of view, to crystallize, finally, a consensus or a policy, but it doesn't just spring up by itself.

So perhaps as your committee looks at international communications policy generally, a look at improved coordinating mechanisms that would bring together in a systematic way an opportunity for extensive discussion and dialog and debate, where the interactions of the various components that bear on information technology can be discussed might be helpful as we continue to move in this postindustrial age.

Thank you, Mr. Chairman.

Mr. FASCELL. Is there a WARC 2000, or should there be?

Mr. URBANY. Some are proposing a WARC 1989. That was one of the proposals—one of the proposed conferences.

Mr. PRONST. As again mentioned, there were proposals by some administrations to have a recurrence of the general kind of WARC in about 10 years. It was the consensus, however, and in the final action of this Conference a resolution was adopted that said not before 10 years.

No time frame was specified. It was agreed not before 10 years.

Mr. FASCELL. With all the regional conferences, I don't see how you can get ready anyway.

Mr. MICA. The chairman must leave at this time. We will continue with some questioning.

Mr. Pritchard, do you have any questions?

Mr. PRITCHARD. No. I would comment we always seem to be in hearings and listening to panels, but it is nice to meet with people who seem to have had, on balance, a success. Things turned out reasonably well. Things look manageable, not out of control.

I must say that is a welcome change from most of the things that we deal with these days.

If I am hearing what you people are saying, on balance we should be doing what we are doing, maybe looking at how we structure some of this decisionmaking. Maybe we can learn a few things from the way you people prepared and went to your conference. Maybe it is because you were working in a single area, but having been involved in the law of the seas for 7 years now—I forget how many, maybe it is 10—I must say yours sounds awfully good.

I think it is kind of a welcome change. The fact that you feel the money spent and the opportunity to meet counterparts in other countries was of great value is important.

There is an avenue there for working these things out before you get to a conference. That is a great help.

So all these things seem to point to a rather refreshing report. Whether or not you will get more money to do those things, at least you make a very good case. You have a track record of success to work which is quite different than many of the other requests we are getting.

I don't have any deep, serious questions.

I can remember listening to you people when you were getting ready to go. It sounds to me like things turned out pretty darned well. I guess I should congratulate all of you, particularly those of you who had the primary role of responsibility. I think the country was well served.

Thank you. That is all the comments I have.

Mr. MICA. Let me say this before we close the hearing.

From what I have heard, it has been highly successful. I am overwhelmed by the comments and knowledge displayed heer before us. I guess here in the Congress, I am a newcomer. I have learned very quickly to respect anyone who can bring order out of chaos because this could be a very chaotic situation. The job you have done is tremendous.

I happen to be kind of a personal radio buff, and I really recognize the ramifications of this situation, if it were not successful. It would be chaotic the world over.

With regard to questions, I noticed that we submitted over 900 proposals. There were 15,000 separate proposals, I think, from 140 nations. As soon as I review those proposals, I may have some questions.

Notwithstanding that, unless there are any further comments, the subcommittee will stand adjourned.

[Whereupon, at 12:10 p.m., the subcommittee was adjourned.]

APPENDIX 1

Questions Submitted in Writing to Glen O. Robinson, Chairman, U.S. Delegation to the 1979 World Administrative Radio Conference, and Responses Thereto

DELEGATION ISSUES:

Question: Where and by whom were the decisions made on the makeup of the delegation?

I was responsible for drawing up an initial list of proposed members of the U.S. WARC Delegation. In composing this list I took into account hundreds of recommendations from the Congress, the White House, the State Department, interested federal agencies, industry and the public. My list of proposed nominees was then submitted to the State Department's Bureau of International Organization Affairs (IO), which has the formal responsibility for accreditation of delegations to international conferences. IO concurred in my recommendations. Finally, Deputy Secretary Christopher reviewed the list and approved it as Acting Secretary.

Question: How many women and minorities are included on this delegation? Do you really consider this to be effective representation?

There are five women and five minority delegates. In view of the relatively few women and minorities working in the relevant technical fields or in relevant areas of the Foreign Service, I believe the representation of minorities and women reasonable on the delegation.

Question: In looking over this list, I note that none of the government representatives seem to hold a rank evwn at the Assistant Secretary level, much less any higher. Do you view this as a problem? Why or why not?

Insofar as I report directly to the Deputy Secretary of State my own position should be regarded as equivalent to the rank of Assistant Secretary. That rank is at least comparable to, if not greater than, the rank of most other chiefs of delegation expected to serve at the conference. To the best of my knowledge it is higher than the rank of any other full time head of a major delegation. At the conference I will hold the rank of Ambassador. In addition, a number of countries are aware that I am a former FCC Commissioner. Under these circumstances I do not regard rank as in any way a problem.

Question: How many support staff will accompany the delegation to Geneva?

A support staff of 23 technical advisors and 11 administrative assistants (including clerical) will accompany the delegation to Geneva.

Question: I am concerned that the delegation does not seem to have anyone of significant rank who has experience in communications issues from a political standpoint -- someone like a career Ambassador who could help fill the gap. Would you care to comment?

William vanden Heuvel, U.S. Ambassador to the U.N. Organizations in Geneva, will serve as a senior political advisor to the delegation. In addition, I should note that a number of members of the delegation have had extensive experience in international affairs. To name a few:

Kalmann Schaeffer, Foreign Affairs Advisor at the Federal Communications Commission, has had extensive prior experience with the U.N., with the International Labor Organization and now with the FCC. He has been a representative to UNESCO's MacBride Commission and is an FCC representative to the U.N.'s Committee on the Peaceful Uses of Outer Space.

Wilson Dizard, a vice chairman of the delegation and a senior Foreign Service Officer, brings to the delegation over 30 years of foreign affairs experience with overseas assignments in Turkey, Greece, Iran, Pakistan, Poland, and Viet Nam. In addition, he served as Assistant Deputy Director of the U.S. Information Agency, 1966-67, and was a member of the U.S. Delegation to the International Telecommunications Satellite Conference, 1968-69.

Jay Katzen, another senior Foreign Service Officer, has had extensive experience in dealing with activities of the Non-Aligned Movement. He has served in Zaire, Mali, Romania, and the Congo, and was Political Advisor to the U.S. Mission to the U.N., 1973-77.

A third Foreign Service Officer on the delegation is Dexter Anderson, who has had overseas experience in West Germany, Cameroon, and the U.S.S.R. He is currently serving as Telecommunications Attache in Geneva.

A fourth senior Foreign Service Officer is Constantine Warvariv, currently Director of the Office of Transportation and Communications in IO, has had considerable experience with UNESCO. He has served as Deputy Chief of Mission at our Mission to UNESCO, and as Director of the State Department's Office of UNESCO Affairs. He was also U.S. Spokesman on the Drafting Group at UNESCO's 20th General Assembly, in November 1978.

Considering this extensive foreign service experience available to the delegation, and the related ITU experience of our delegation, I see no reason whatsoever to add a "career Ambassador" to the delegation.

Question: How would you rate the level of experience of the delegation Members with respect to earlier such conferences (WARC '59, WARC '63, WARC '71, WARC '77) and to experience with international negotiating generally? According to my estimates, only 14 of the 63 delegates, or 22%, have previous conference experience. Do you view this as troublesome?

The Subcommittee's figures on the international conference experience of the delegates are not accurate. 51 out of 64 delegation members, or 81 percent, have had prior conference experience -- either within the framework of the ITU or the U.S. Foreign Service. Except for public interest group representatives most of the others have participated in the ITU's CCIR, and in WARC bilaterals.

Question: Are all the corporations represented on this delegation wholly-owned or majority-owned U.S. corporations? (NOTE: There have been instances in the past when private sector representatives on U.S. delegations to international conferences have been from companies with majority foreign ownership.)

According to company documents on file with the SEC, none of the corporations represented on the delegation is more than 5 percent foreign-owned; shares in most are widely held and the foreign ownership, if any, is negligible.

SUBSTANTIVE ISSUES:

Question: Would you highlight some of the major proposals we plan to make at WARC and then submit for the committee files a copy of all the proposals and a narrative summary of the proposals for the record?

A copy of the U.S. proposals is attached. It includes a narrative summary of the proposals. A short outline of our major proposals follows:

ALLOCATIONS

Broadcast Services

Frequencies for different types of radio and television broadcast services are spread throughout the spectrum. The services for which we propose new or changed allocations include:

Medium frequency broadcasting. To ease present domestic congestion and meet future expansion, a number of proposals for more efficient use of MF broadcast frequencies are under study by the FCC and NTIA. Among these is an expansion of the present AM band. To provide for such a future expansion, the U.S. WARC proposal recommends new MF broadcast allocations for Region 2 (Western Hemisphere).

High frequency broadcasting. The primary U.S. users of this service are the Voice of America, Radio Free Europe and Radio Liberty, together with a small number of religious shortwave stations. To ease international frequency congestion which has resulted from the increase in shortwave broadcasting since 1959, we propose significant increases in allocations.

Broadcasting Satellite Service (BSS). Essentially BSS involves transmitting television or aural radio signals to large numbers of small earth terminals - as small as a meter wide, depending upon the strength of the incoming satellite signal. The U.S. proposals for this service are generally designed to strengthen and expand prospects for its use. They include:

-- Modifications in current regulations to permit aural broadcasting from satellites in one region of the UHF band.

-- Relaxation of technical restrictions in the 2.5 GHz broadcasting satellite band to allow for possible use

of an innovative BSS technology designed for large numbers of small earth terminals.

-- Realignment of allocations at 12 GHz to provide for frequency separation between BSS and fixed satellite service. This is the most important new element in our BSS allocation proposal.

-- Provision for new allocation in the "higher" parts of the spectrum to allow for future expansion of BSS services.

Fixed and Fixed Satellite Service

The fixed service provides point-to-point communications. Fixed service allocations occur throughout the spectrum but for purposes of 1979 we are primarily interested in the higher reaches of the spectrum. Of special interest is the fixed satellite service. The U.S. proposals are designed to accommodate the frequency requirements for varying fixed satellite uses here and abroad. A sizeable increase in allocations to meet INTELSAT's international fixed satellite requirements is proposed. Domestically, an expansion of allocations at 12 GHz is proposed, as noted earlier, to meet commercial needs. In addition, the U.S. proposes new fixed satellite allocations in the portion of the spectrum above 40 GHz in anticipation of technological advances which will make these bands available for future needs.

Mobile and Mobile Satellite Services

Mobile communications - to ships, cars, airplanes or individuals on foot - is one of the fastest expanding areas of communications. By its nature, it depends entirely on radio links. Until very recently, it relied primarily on the high-frequency bands for medium to long distance circuits. In the past decade, improvements in satellite technology have added a new dimension to the prospects for meeting vastly expanded mobile communications needs.

In the HF bands, mobile operations have shared successfully with the fixed service for many years. Because of the increasing need for allocations of this type, the U.S. is proposing that mobile service allocation be added to several HF fixed bands on a co-equal primary basis. We propose minor changes in aeronautical mobile and significant increases in maritime mobile, mainly in the HF bands.

Mobile satellite services are going to be an increasingly important component in world communications. We propose to meet this requirement to accommodate Defense needs in the 7/8 GHz band.

A commercial maritime satellite system, operated by the Communications Satellite Corporation, is serving ships of several nations. This service will be taken over by a new International Maritime Satellite Organization (INMARSAT). Frequency allocations are proposed to meet this requirement and a rather more speculative "AEROSAT" system.

Another key area is land mobile service, also expanding rapidly as the result of demands for connection to the public telephone network, small business applications, police and other local government operations, etc. We propose shared allocations with broadcasting in the UHF band, as well as allocations for a land mobile satellite.

Radiodetermination Services

Radar services are another area where improved technology has widened the prospects for improved worldwide communications services. U.S. proposals call for important new allocations for radiodetermination; of special importance is a radionavigation satellite service to provide for the new NAVSTAR Global Positioning System (GPS). Using 24 polar-orbiting satellites, GPS will provide worldwide accurate position information to ships and planes when it becomes operational during the next decade.

Amateur Service

Amateur radio is a long-standing element in U.S. communications. It is important not simply as a hobby but also because of the important services it can perform in disaster relief and other emergencies. The U.S. proposals call for moderate increase in frequency allocation for the amateur service, including some which will improve the possibility of amateur communication on a worldwide basis through the entire 24-hour day. Other increases are proposed for amateur satellite service. The amateurs have operated a satellite program (OSCAR - Orbiting Satellite Carrying Amateur Radio) for a number of years and have added considerably to technical data on the use of low-orbit satellites.

Earth Exploration Satellite Service

The sensing satellites are among the most significant and useful developments to come out of space research. There are two types of sensors: active and passive. Active sensors are space radar-like devices that utilize information contained in the reflection of a radiated signal. Passive

sensors collect data based on natural emissions from the earth's land masses, oceans and atmosphere or reflection of light from another source (e.g., the sun). Sensors have important uses for global economic development and environmental planning. The U.S. proposals provide for expanded allocations for spaceborne passive and active sensors and for space-to-space data links for transferring sensor data to relay satellites.

Radio Astronomy

Radio astronomy has become an increasingly important tool for studying both our own galaxy and beyond. Technically the problem is similar to the problem of protecting passive sensors. The need is to assure astronomers interference-free "quiet zones" around their frequencies in order to permit accurate readings of very weak signals from outer space. The U.S. proposals provide for a significant increase in radio astronomy allocations.

Solar Power Satellite Systems

We propose a single frequency for an experimental solar power satellite system. NASA and DOE are exploring the possibility of a synchronous satellite to collect solar energy, convert it to direct current and then transform it into microwave power for transmittal to collecting terminals on earth where it would be converted into usable electric power.

NON-ALLOCATION PROPOSALS

The non-allocation proposals in the U.S. submission to the ITU relate to changes in technical parameters to present services and to possible changes in ITU procedures for administering spectrum allocations.

Some of the technical proposals are very important but controversial. The most important deal with various aspects of sharing among different services -- which is very important to accommodating U.S. proposed changes to the allocations.

With regard to procedural changes, we propose few changes because we think the present procedures have worked well. We are, however, studying foreign proposals for procedural changes and it is likely we will affirmatively support some of these.

Question: Mr. Robinson, it is my understanding that the Soviet Union recently brought into operation 29 of the world's most powerful high frequency broadcasting transmitters and is calling for no increase in frequencies for broadcasting. Your statement, however, indicates that resistance to proposed increases "will come mainly from developing countries which have continued need for other services which they fear would have to be sacrificed." (p.6) Wouldn't you say that Soviet opposition is rather significant? How do you plan to address this opposition?

I believe my statement, as quoted, is correct. The fact that the Soviet Union is not calling for an increase in frequencies for broadcasting does not mean they would oppose such an increase. We have no reason to think they will oppose such an increase even though, evidently, they will not actively support it. Seeing no specific Soviet opposition we do not have a specific strategy for countering it. However, with or without their support we will make a strong effort to obtain acceptance of our HF proposals.

Question: As you probably know, the Senate-passed version of the fiscal year 1980-1981 State Department Authorization contains a provision exempting private sector representatives on the WARC delegation from certain conflict of interest provisions, provided the Secretary of State approves the exemption. Do you support this provision? What effect will passage have on the "Guidelines on Participation of Private Sector Representatives on United States Delegations"? Do antitrust concerns enter into the activities of private sector representatives vis-a-vis one another at this conference?

The State Department has made no objection to passage of this amendment, nor do I. I see it providing somewhat more flexibility in carrying out the work of the delegation. The provision would be a very narrow exception to Federal conflict of interest laws with respect to private sector representatives speaking on behalf of the United States at WARC-79. It would apply only where no government employee is as well qualified to represent U.S. interests with respect to a particular matter and the Secretary of State or his designee so certifies, and designation of a private sector representative to speak on behalf of the United States is in the national interest. With or without the provision, I believe sufficient flexibility exists within the present guidelines to enable the private sector representatives on the delegation to play effective roles at the conference.

With respect to matters of antitrust, we believe that the Guidelines provide for private participation on U.S. Delegations in a manner which does not create risks of antitrust liability. Each delegate will receive a copy of the antitrust guidance prepared by the Antitrust Division, Department of Justice, which, pursuant to Section III (C) (3) of the Guidelines, is provided to private sector representatives of trade or business interests invited to participate on U.S. Delegations.

Question: I note that you quote a British journalist as saying that the United States is "preparing for WARC as for the Olympic Games." Does this mean we are leaving all the preparations to the private sector? Seriously, though, what do you view as the role to be played by private sector representatives?

Within the constraints of the Guidelines in effect at the time of the conference, we expect the private sector representatives on the delegation to provide the responsible U.S. Government officials with on-the-spot views and information based on their private perspectives. Under the present Guidelines, they may not negotiate for the United States or decide U.S. policy, but may explain technical or factual points. In the event the Guidelines are changed as a consequence of congressional action (see preceding question) I anticipate using some private representatives as spokespersons.

Question: I think you'll agree that controlling a delegation of 64 people plus staff is a very difficult, if not impossible, job. How do you plan to insure that the United States is not inadvertently committed to a position by an individual delegate who does not have that authority?

All members of the delegation have received directions concerning their authority to speak on behalf of the U.S. Government and the need to obtain clearance through principal spokespersons, myself and my deputies. In addition, I will oversee the activities of the various conference committees by means of daily reports prepared by the U.S. spokespersons to these groups. These reports, which will be compiled and formatted by the delegation's computer, should result in efficient direction of the members' work.

Question: What kinds of sessions, if any, do you plan to hold with the delegation and its support staff on matters such as security of documents at the conference, effective communication among the delegates, etc. ? When do you plan to hold these sessions?

We plan to have regular meetings of the delegation and the support staff throughout the summer in order to discuss preparations for the conference. Our first meeting was held on June 15, and a second meeting is scheduled for July 11. Thereafter, the full delegation will meet every two weeks. In addition, working groups are meeting regularly to develop U.S. positions.

Question: Does our position on frequency allocation accommodate the concept of equitable access, or does it still reflect your statement of January 11, 1979 indicating that we seek "incremental changes tailored to evolving technology as well as new and evolving social and economic needs"? (Note to Members" This latter position expresses the view which is anathema to the developing nations -- that "if you don't have the technology to use the frequency, you can't have it.")

My use of the word "incremental" was intended to connote partial, evolutionary change. Rather than setting forth a radical, wholesale set of changes particularly along the lines of a wholesale redistribution of frequencies through fixed assignment plans as proposed by some, we propose a system which does not preempt particular frequencies (or orbit slots) until they are needed. I take exception to the interpretation given in the "Note to Members" regarding my statement in the question. This is a caricature of our position. Our position is that the table of allocations and associated procedures should remain flexible so that they can accommodate new uses as they emerge. We believe that access can be assured within this framework. We are prepared to consider specific proposals (so far most have been too general) for changes to present procedures in the form of allotment plans or other measures. However, our baseline position is that the present regulatory procedures are adequate. Obviously, not all LDC's agree with our basic view of the present system but not all disagree, either. It is certainly hyperbole to say that they find our position "anathema".

Question: In light of the Helsinki Basket Three provisions to ease restrictions on information channels and the poor record of compliance by the Soviet Union and its allies, what form do you think the issue of jamming might take at WARC? How will we deal with it?

It is my view at the present time that WARC is not an appropriate place to debate this issue. Were we to raise this an an initial matter at WARC, I think we would not only fail to gain any support for a resolution to end jamming, we could also jeopardize our positions on other issues. Consideration is being given to the possibility of introducing a resolution calling for an end to jamming in the event the conference demands a future planning conference. The rationale for such a resolution would be to point out that planning and jamming are incompatible. Even in this situation I am personally skeptical about the desirability of raising this issue at the conference. Nevertheless I hold it open as a possibility.

Question: What significance for WARC can be found in the transborder data flow issue?

There appears to be no direct significance for WARC in the transborder data flow issue being debated in the OECD and elsewhere. Transborder data flow is not linked to the use of the radio spectrum. Neither an East-West nor a North-South issue, it has not surfaced in any of our discussions or reports to date.

Question: What form do you think the "New World Information Order" debate will take at WARC, most particularly the concerns relating to a so-called "balanced" flow of information into and out of the developing world and the direct broadcast satellite issue? Would you discuss the components of the DBS issue and prior consent?

The term "New World Information Order" has no specific content, but includes several related but distinct issues involving not only North-South issues but East-West (and even "West-West") conflicts.

There is, first, the debate over "free flow" versus "balanced flow" of information. The debate has been focused on the Mass Media Declaration which was recently adopted at UNESCO last year. The U.S., resisting the idea of any declaration which would compromise its committment to freedom of speech here and abroad, was successful in obtaining revisions to earlier drafts of the declaration which could

have impeded free flow. As a result of our success, one potential source of political friction at WARC has for now at least been muted, though we know that there will be some effort to raise this issue again at WARC.

Related to the Mass Media issue is the debate in the U.N. Outer Space Committee over DBS -- direct broadcast satellites. A majority of countries appear to be committed to some form of prior consent as a prerequisite to satellite broadcasting beyond national borders. The firm U.S. position on DBS is, again, to insist on free flow of information. The Administration's report to the Congress on International Communications Policy (January 1979) placed on the public record U.S. opposition to a prior consent regime, but noted that "the United States is, however, willing to accept a principle committing States to non-binding consultations, if requested, with receiving States before initiating a DBS service." For the time being the debate in the U.N. is stalemated. However, the debate may be adverse to the political climate at WARC. It also could influence particular WARC concerns, for example, by tying allocations to a principle of prior consent. In one foreign proposal it appears that the issue is raised by a proposed redefinition of the term "broadcasting".

The reverse side of the DBS issue is presented by satellite sensing. A number of countries have pressed for a requirement of prior consent by sensed countries as a prerequisite to the dissemination of sensing data, or even to being sensed. This is the reverse of DBS since the concern arises over the flow of information from within the country to other countries outside -- rather than the other way around. But the underlying issue is quite similar insofar as it pits assertions of national sovereignty against freedom of information. As with DBS, the issue is pending before the U.N. Outer Space Committee. As with DBS, the issue could arise at WARC in context of specific allocations for this service. As with DBS, the U.S. is firmly opposed to any principle of prior consent.

Question: In your view, is there any significance for WARC in the Third World concern over their underdeveloped domestic communications infrastructure?

No doubt a key issue on the minds of Third World representatives at WARC will be the transfer of technology. It is an argument common to U.N. forums these days. Within

the ITU/WARC context, we may well be able to be of assistance. One key LDC desideratum is the creation of regional training centers and data banks, the largest of these tentatively planned for Sri Lanka. We are encouraging U.S. industry to consider means of assisting this program. Since FCC/NTIA also have a frequency management training program to bring foreign officials to the U.S., they have contracted for a study of LDC spectrum management needs and what resources we have available to meet these needs. That study should be completed by September 15.

We are already looking into means whereby the budget for such training could be augmented. We can also assist in developing national training programs: DOD has expressed its willingness to explore such training possibilities at Scott AFB. Additionally, we have an ongoing $24 million AID program for the use of satellites in telecommunications. Projects are being considered for a number of LDCs, and we are encouraging AID to undertake a project for the use of satellites for functional literacy programs in Kenya. (Regarding this $24 million AID program, I might note that it was because of the possible spillover benefits for WARC that I successfully urged some months ago that this program be firmly established in the face of other projects which then ranked higher among AID's priorities.)

One UNESCO-related event which could impact on the WARC is a planning meeting to develop a proposal for institutional arrangements to "systematize consultation on communications development activities, needs and plans", a proposal made by the United States at the UNESCO General Conference held last fall in Paris. The U.S. is hosting the meeting in Washington, November 6-9.

Question: An early State Department memorandum on WARC issues stated "There is nothing constructive to be achieved by engaging in a general debate over principles of free versus balanced flow of information in the context of a conference devoted to radio spectrum allocation." What happens if the developing nations' bloc decides to make agreement with a given U.S. position contingent on our support for a mass media declaration which we found completely unacceptable? It seems to me that what we consider "constructive" is meaningless in a politically-charged international forum. Have you prepared for these "unconstructive" contingencies?

As a starting point, let me note that "unacceptable" proposals will not be accepted whether they deal with free flow issues or any other. With specific regard to the free flow issue U.S. policy opposes on principle political

restrictions on the free flow of information. That general policy is unchanged. It will not be changed at WARC. With regard to other "unconstructive contingencies" we have prepared positions on those that we can foresee as being serious issues. The fact that we do not view them as constructive does not imply that we do not foresee them as arising or that we are unprepared for them. However, our basic position on such extraneous political issues is to insist that they not be debated at WARC. We acknowledge that the WARC may be "politically-charged". But we do not see it as inevitable that it be a forum for the mere exchange of political slogans. I should add that we are not alone in this position; we have strong support from many developing and developed countries on this basic view.

Question: What is the current status of the debate over sovereignty claims for space by certain equatorial countries like Colombia who claims sovereignty over satellites "parked" in geostationary orbit over their countries?

It is important to distinguish precisely what Colombia and other equatorial countries claim. It is sovereignty over space extending above their territories, not over satellites. The equatorial claims are old ones that have been pursued primarily in the U.N. Committee on the Peaceful Uses of Outer Space, although they have also arisen in ITU conferences. A newer development is the proposal of several countries, including the USSR, for a separate legal regime over the geostationary orbit.

We regard claims of sovereignty over the geostationary orbit to be inconsistent with the Outer Space Treaty. The proponents of such claims have had little support in any forum and we do not see any substantial support at WARC, although we know the claims will be made.

Question: What impact do you think the August 1979 U.N. Conference on Science and Technology will have on WARC?

The U.N. Conference on Science and Technology in Development (UNCSTD) is another in the series of U.N. debates on North/South relations. As best we can determine, WARC will not play a role at UNCSTD. The results and much of the language of UNCSTD could spill over into WARC: UNCSTD is being held only a few weeks before WARC, and some LDCs might simply carry their unsatisfied complaints over technology transfer in general to WARC. However, it is doubtful that the UNCSTD conference will have any distinctive impact on WARC.

Question: Has the U.S. provided any assistance to developing nations in preparing for WARC, since their technical expertise is not as great as ours?

We have attended all three ITU regional seminars, whose intention was to prepare delegates for the WARC, and which included briefings on the preparation of country proposals. These meetings were held in Nairobi, Panama, and Sydney. In Nairobi, for instance, a U.S. team spoke with delegates from all African and Arab countries likely to be at WARC. Many commented on how useful our explanations were, not only in terms of their understanding our proposals, but also in terms of their thinking about their own. They also were grateful for the guidance given in the same vein during our extensive bilaterals. Although we gave some thought at an earlier juncture to the desirability of offering our assistance specifically, we chose not to do so, fearing it might be misunderstood and resented. We are satisfied with the atmosphere of cooperation that has been created by virtue of the manner and degree to which we did choose to follow through on satisfying real needs in this area.

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APPENDIX 2

Commentary by the U.S. Delegation to the 1979 World Administrative Radio Conference: Summary Report No. 9

The World Administrative Radio Conference was concluded with the formal signing of the Final Acts on December 6.

The conference dealt with more than 15,000 individual proposals ranging from the trivial to the vital in terms of world telecommunications. The Final Acts comprise 1100 pages.

The following commentary is provided by the United States Delegation.

We believe that WARC was successful in carrying out its objectives. While difficulties, both technical and political, were foreseen at the outset, we were impressed by the general absence of the latter and the ultimate satisfactory resolution of most of the former. Whatever concerns we may have about a few particular decisions taken by the conference, we believe that the conference Final Acts will provide a technical and regulatory framework for the expansion of communications facilities in the U.S. and abroad in the coming years, while maintaining a significant degree of order in allocating the spectrum among services.

The U.S. submitted over 900 proposals, each one important, in varying degrees, to some national, social, economic and/or security need. Almost all U.S. objectives have been attained, either in whole or in substantial part.

There will be no immediate changes in the structure or operation of the U.S. telecommunications system as a result of conference decisions. Most changes mandated by the conference will be phased in over a period of time.

A major U.S. objective - support of the International Telecommunication Union (ITU) as the international agency capable of providing a useful forum for discussing global telecommunications needs and problems and of carrying out the complex decisions of the conference - was fully achieved. Conference decisions affirmed (on a consensus basis in most instances) the importance of close cooperation in this important area of international relations, working through the ITU mechanism. We have reason to be well

satisfied by the way in which conference business was conducted. Although there was initial apprehension about politicization of the conference -- and there were a few unfortunate political skirmishes -- we think the effectiveness of the ITU as a specialized agency devoted to constructive international cooperation has not been compromised.

There were conference issues where the developing countries supported each other in pursuit of what they preceived to be their common interests but this generally did not involve ideological bloc voting independent of pursuing individual national interests. The United States supported developing countries in many instances, not in others. The same was true of our conference relations with our industrial allies and with the communist countries. With few exceptions we are pleased with the good working relationships that were established at the conference between the U.S. and other countries. We believe they provide a good basis for future ITU activity. Although there were occasions during the conference in which the U.S. seemed to be specially susceptible to having its interests challenged, by the end of the conference this no longer appeared true. In retrospect, it is noteworthy how often we found ourselves in alliance with different groups based on common interests rather than any fixed ideological mind set.

The U.S. has submitted reservations on a small number of conference decisions where we felt that decisions taken could adversely affect an important national communications requirement. A reservation is a formal statement that we will not be bound by a particular conference decision. In each case, the decision was made on the basis of protecting important U.S. interests. However, too much should not be made of these reservations. Although the U.S. previously had taken only one reservation at a WARC, this was an unusual record we could not hope to have maintained. In any case we anticipated we would probably find it necessary to reserve on some matters. What is noteworthy is that of the many hundreds of particular decisions, many of them significant, only a bare handful were unacceptable to us.

The conference recommended that a number of ITU specialized conferences should be held during the coming years in which more detailed attention can be given to certain services or issues which, in the conference's opinion, could be better handled in these forums. Planning conferences are scheduled for the space services and geostationary orbit, feeder links for the broadcasting satellite service, and for

the high frequency band broadcasting service, and a general mobile service conference. (A regional conference on planning use of the 12 GHz band in the western hemisphere has already been proposed by the 1977 Broadcast Satellite WARC.) The U.S. has long recognized the importance of utilizing specialized conferences and supports the convening of the above conferences.

Setting aside the generally good results, U.S. concerns about the conference results centered around several factors. One was a tendency to change some important, long-standing allocations without giving adequate recognition to existing operations and investment by other countries (though by contrast, a majority of countries were insistent on maintaining certain allocations, such as fixed services, where they had existing operations.) Another was a desire to change regulatory procedures in ways that, in our view, will not be effective. In its original submission of proposals, the U.S. recommended adjustments in various procedures to bring them into line with modern conditions. A number of these were adopted. We are somewhat concerned about what seem to be unrealistic expectations of some countries regarding the feasibility of assignment plans for space services and the geostationary orbit. Nonetheless we will actively participate in future discussions and negotiations with a view towards seeking an acceptable accommodation of both developed and developing country needs.

As noted earlier, the conference dealt with literally thousands of decisions. The following is a summary of some of the major issues decided by the conference, together with a preliminary assessment of their impact on U.S. interests.

MF Broadcasting. The U.S. sought additional medium wave frequency allocations to permit an expansion of the number of AM broadcasting stations in this country. Our major proposal was to add spectrum for broadcasting from 1605-1860 kHz, part of which would be exclusively broadcast and part shared with other services. U.S. objectives were substantially, but not entirely, met, since it was not our intention to have exclusive allocations in the international table below 1800 kHz. It was our desire to maintain co-equal sharing of all services to enable the U.S. to make national decisions thereby protecting our radiolocation requirements while providing for the expansion of broadcasting. Broadcasting will have an exclusive allocation in the band 1605-1625 kHz, and in the band 1625-1705 kHz it will be on a primary basis, with fixed and mobile on a permitted basis and radiolocation on a secondary basis. A conference resolution proposes that a Region 2 conference be held by 1985 at the latest to plan for broadcast services in the 1625-1665 kHz band to commence after July 1, 1987 and for broadcast services in the 1665-1705 kHz band to commence after July 1, 1990.

HF Broadcasting. Reception of high frequency (short-wave) broadcasts should be somewhat clearer and stronger by the end of the 1980's. The conference allocated 60 percent more spectrum in the major 9, 11, 15, 17, and 21 MHz bands for broadcasting to be implemented at a specialized high frequency broadcasting conference in the mid-1980's to plan for the more efficient and equitable use of the broadcasting bands. The new allocations are also dependent on successful reaccommodation of fixed service assignments that will be displaced by the new allocations. A special reaccommodation procedure was approved. The U.S. approves the new procedure and in principle supports the convening of a future HF broadcast planning conference. However, U.S. objectives were only partly met by this increase. Despite appeals by the U.S., proposals to expand the important 6 and 7 MHz broadcasting bands failed because of opposition from a majority of countries having continued need of these bands for the fixed service. In a Protocal Statement, the U.S. reserves its rights in respect to the use of additional bands for broadcasting until a successful conclusion of the specialized broadcasting conference.

VHF and UHF Broadcasting. The U.S. made no allocation proposals pertinent to VHF broadcasting, and no decisions were taken at the conference affecting U.S. broadcast allocations. In the UHF band the U.S. proposed sharing of broadcasting with fixed and mobile services. This is treated under land mobile below.

Land Mobile Services. The conference generally increased allocations for the Mobile services worldwide, particularly in recognition of Land Mobile needs. Mobile allocations in bands below 1 GHz where U.S. Land Mobile facilities exist were preserved. New bands were allocated in Regions 2 and 3 at 420-430 MHz and 440-450 MHz to align with existing Region 1 allocations. These and other bands allocated in the table or by footnote are of limited immediate value for Land Mobile in the U.S. because of existing services.

The U.S. goals of flexibility in the UHF television band 470-890 MHz through co-equal sharing of broadcasting, fixed and mobile services was essentially, though incompletely, achieved either by table allocations or footnote allocations as were mobile allocations in portions of the band 890-960 MHz. U.S. footnote allocations were taken because of the opposition by some Region 2 countries to full table allocations. U.S. Land Mobile interests

were thus protected and the opportunity for future growth in the U.S. was preserved. However, the Conference imposed certain regulatory agreement procedures on the use of these footnote allocations which in essence did not provide for equality of operation. This procedure the U.S. found unacceptable. In a Protocol, the U.S. reserved its right to conduct coordination without these burdensome requirements.

Amateur Service. U.S. objectives for amateur service were:

(A) to maintain the present high frequency (shortwave) bands essentially unchanged, and to provide an increase in three new, narrow bands to bridge gaps between existing allocations:

(B) to maintain present VHF, UHF, and Microwave allocations, most of which are shared successfully with government radiolocation operations, and to add new bands at intervals in newly allocated spectrum above 40 GHz;

(C) to provide access for the amateur satellite service to several narrow bands between 1 and 10 GHz, where conditions are the most favorable for space communication.

These objectives were fully met. The present high frequency amateur bands were maintained, and three new bands were allocated for an increase of 7 percent in the shortwave spectrum available to the amateur service. The present VHF, UHF, and Microwave allocations were largely maintained in the U.S., with a new band shared with other services near 900 MHz. However, the fixed and mobile services were added as new sharing partners in several of these bands, which may present amateur operations with problems because of the difficulty of protecting such services. Greater allocations for the amateur satellite service were made than had been sought originally by the U.S., without affecting other U.S. objectives. Finally, new bands for the amateur and amateur satellite services were made available between 40 and 275 GHz, thus ensuring future exploration at the frontiers of the radio spectrum by properly licensed, private individuals.

Radionavigation Satellite Service. One of the major objectives of the U.S. at WARC-79 was to provide allocations for our newest satellite navigation system, NAVSTAR-Global Positioning System (GPS). In its present state, it consists of six satellites, although the ultimate system is designed for operations with twenty-four satellites in continuous polar orbit. Originally designed for military applications (ships,

aircraft, troops), it can be adapted to civilian use by not supplying some of the sophisticated technology. Even in its civilian mode, GPS is far more accurate than any other radionavigation system in existence. This objective was fully met; allocations obtained exceeded U.S. proposals without seriously impacting on other U.S. objectives.

Aeronautical Service. WARC-79 decisions will enable aviation requirements to be satisfied through the turn of the century. U.S. objectives were met. All presently used aeronautical allocations were retained while a small amount of additional spectrum was made available to support firmly planned aeronautical systems. The 118-136 MHz air-ground communications band was expanded to 137 MHz effective January 1, 1990. Additionally, footnote status for possible space applications in the VHF was maintained. The microwave landing system (MLS) was given priority status in the 5000-5250 MHz band to ensure protection for this next generation approach and landing aid recently decided upon by the International Civil Aviation Organization (ICAO). The new, ground-based aeronautical radar beacon system received spectrum support in the 9300-9320 MHz band.

Maritime Mobile. In the MF bands the basic U.S. objective was to maintain existing allocations, but allow for some changes in the 400 kHz band to accommodate aeronautical radionavigation. In the HF band the U.S. sought substantial increases in existing allocations. (As in the case of HF broadcasting these are subject to planning at a future mobile conference, and are dependent on reaccommodation of displaced fixed service assignments.) While the overall magnitude of the HF increase was even larger than the U.S. proposed, the U.S. was disappointed in not obtaining greater increases below 10 MHz. Accordingly the U.S. entered a Protocol Statement reserving its rights to meet its requirements under primary mobile allocations which were adopted. In the VHF band U.S. objectives were met but we were disappointed that a U.S. proposal for a worldwide allocation in the 216-225 MHz band was not approved (however, an allocation was made for Region 2).

Radiolocation. WARC-79 might have a long-term adverse impact on the use of radiolocation (radar) in some parts of the spectrum as a consequence of reducing the status of the service or forcing it to share with other services with which it is not compatible because of interference to such services. The radars in these bands are not themselves adversely affected; the problem is that of providing protection to others. Because of these difficulties, the

U.S. reserved the right to operate in designated radiolocation bands without guaranteeing protection to those services. This protects U.S. interests.

A special concern of the U.S. was to preserve the status of the radiolocation service in the 3400-3600 MHz band, now used by important military radar systems. The band has long been shared with the fixed satellite service (FSS), and in order to facilitate use of FSS systems — particularly INTELSAT — some administrations proposed to downgrade the radars to secondary status. The controversy over this proposal, and consequential negotiations was intense and sustained. However, a compromise was worked out by the U.S. and others which restored primary status for radars subject to a footnote provision urging but not mandating administrations to phase out of the band and to take practicable steps to protect FSS. As part of the compromise the U.S. and several other major countries made a formal declaration of their intention to accommodate the FSS when it is feasible to do so.

Fixed Satellite Service - General. The U.S. sought to accommodate the need for increased frequencies for the FSS for domestic and international use. Particularly important was a requirement for frequencies below 10 GHz. This requirement gave rise to sharp controversy throughout the entire period of the conference. The U.S. opposed FSS accommodation in bands at the expense of other services as proposed by many administrations. Provisions were adopted to facilitate use of existing FSS allocations in 3400-3700 MHz (consistent with retaining status of radiolocation service)(see comment on radiolocation, above). Allocations were also made in the 4 and 6 GHz bands. U.S. objectives were met — though not without much travail and considerable heartburn over the period of the conference.

Fixed Satellite Service - Feeder Links. All administrations sought at the conference to identify suitable bands in the fixed satellite service to serve as feeder links for the broadcasting satellite service. As with FSS generally, this subject was extremely controversial particularly because of proposals to put feeder links in the 14.5-15.35 GHz bands to be shared on primary basis with terrestrial fixed and mobile services. U.S. objected to sharing in this band, particularly in the upper portion, because of worldwide use of the mobile service. U.S. objectives were reasonably satsified by compromise proposals, initiated by the U.S., which provided for use of several bands for uplinks at the option of individual administrations. Among the options is use of the band 14.0-14.8 GHz (14.0-14.5 GHz is currently allocated to FSS and is thus available under

existing provisions; 14.5-14.8 GHz was allocated on an exclusive basis for feeder links). Other bands are 10.7-11.7 GHz in Region 1 only and 17.3-18.1 GHz. It is expected that the latter band will become the principal feeder link band outside Africa and the Middle East.

Fixed Satellite and Broadcasting Satellite Services at 12 GHz. The conference adopted a significant change in the frequency allocations for Region 2 in the 12 GHz band. Since 1971 both fixed satellite and broadcasting satellite services have shared the same frequency band, 11.7-12.2 GHz; since 1977 the use of this band has been subject to the constraints of arc segmentation of the geostationary orbit, which resulted in severe limitation of the number of orbital positions available for either service.

The decision by the 1979 WARC to allocate separate frequency bands to each of the space services eliminates the need for arc segmentation and will permit both fixed and broadcasting satellites to be located across the full visible arc of the geostationary orbit. This not only provides a major increase in the number of available orbital positions, it also provides important flexibility for administrations to place their satellites in orbital positions which are technically and economically most efficient for serving their particular territories.

The specific conference decisions were to allocate the band 11.7-12.3 GHz to the fixed satellite service and the band 12.1-12.7 GHz to the broadcasting satellite service (space-to-earth) and to direct the already scheduled 1983 Region 2 Administrative Radio Conference to divide the overlapping 12.1-12.3 GHz portion of the band between those two services.

In addition, the Mandate of the 1983 Region 2 conference will be to develop a detailed plan for the broadcasting satellite service in the band 12.3-12.7 GHz plus the upper portion of the 12.1-12.3 GHz band which it will allocate to that service. That Region 2 conference will also develop a plan for earth-to-space links for the broadcasting satellite service in the 17.3-18.1 GHz band. The earth-to-space links for the 12 GHz fixed satellites will remain in the 14.0-14.5 GHz band.

These decisions are fully compatible with the U.S. proposals in the 12 GHz band, and should provide all of Region 2 with more than sufficient frequency and orbital resources to meet future requirements in this band.

Mobile Satellite Service at 7/8 GHz. The mobile satellite service has been in use for several years; it has not been recognized as a separate service but operates in bands allocated to the fixed satellite service. The U.S. had three main objectives for this service. First, we sought to gain recognition of the service. This was achieved. Second, we sought to retain two exclusive space service allocations for it (i.e., allocations not shared with terrestrial services). This was not achieved. Third, we sought to obtain additional allocations for this service on both exclusive and shared basis. This was obtained on a shared basis. Overall, essential U.S. objectives were reasonably satisfied.

Mobile Satellite Service (UHF). The basic footnote allocation for the mobile satellite service in the UHF band was maintained. However, an additional sentence was added which places this service on a non-interference basis to other services operating in accordance with the table even after international coordination. This condition was not acceptable to the United States and in a Protocol Statement the U.S. reserved its right to continue operating its current and future mobile satellite systems without recognition or acceptance of this condition.

Mobile Satellite Services at 1535-1660 MHz. Basic U.S. objectives were to achieve additional allocations for the maritime mobile satellite service through adjustments in the current allocations to accommodate the needs of INMARSAT, and to make certain other allocation changes in this band. U.S. objectives were fully met.

Solar Power Satellite. The original U.S. proposal to place a footnote in the Radio Regulations to designate 2450 MHz (a designated ISM band) as a frequency for experimentation leading toward development of power transmission from space was opposed by several countries in both the developed and developing regions of the world. As an alternative to the U.S. proposal we accepted a resolution calling for CCIR study of the matter but also pointing to an SPM report which notes the 2450 MHz as an appropriate frequency for this use. The resolution also invites CCIR to transmit its study to the U.N. In the view of the U.S. Delegation, this conference decision is acceptable.

Radio Astronomy. Virtually all U.S. objectives for radio astronomy were fully achieved. Radio astronomy observatories are located in countries throughout the world and require careful protection from interference which could be caused

by nearby radio transmitters. Several methods of protection for radio astronomy were achieved at the WARC. At some critical frequencies, the radio astronomy service was given primary status in the Table of Frequency Allocations. In other bands, secondary status or footnotes are shown in the Table to alert frequency managers of the existence of radio astronomy observations requiring protection. The conference approved a new article in the Radio Regulations which provides advice to administrations on methods to be used to provide interference protection for radio astronomy observatories. The development of this new article was accomplished largely on the efforts of the United States, in concert with the Netherlands, India, Nigeria, and the Federal Republic of Germany.

Meteorological Service. U.S. objectives were to retain existing spectrum for the meteorological services/atmospheric data collection. This was fully achieved. The U.S. also wanted to expand the meteorological satellite service by 10 MHz near 1700 MHz and provide a new allocation at 18 GHz. This was also achieved. Finally, the U.S. retained all existing footnotes allowing continued ground-based radars for the meteorological service.

Remote Sensing. The U.S. made some fifty proposals to the conference related to microwave remote sensing by satellite and the transmission of the resultant data from space to earth. These remote sensing proposals met with outstanding success at the conference. U.S. objectives were fully met in all of the fifty proposals. The favorable treatment accorded remote sensing proposals was due in part to the awareness of both developing and developed countries of the value of remote sensing in understanding and evaluating climate, weather, ocean effects and resources, earth resources, and environmental quality. As a result of the action taken by the WARC, frequency bands will now be allocated for use by developers of remote sensing equipment and systems which correspond to the physical phenomena that can be measured.

Space Research Service. Allocation provisions for the space research service are a principal means for providing communications for scientific satellite programs (including experimental remote sensing, discussed above). The U.S. uses these allocations for both near earth and deep space programs, and, in particular, for the TDRSS. All U.S. proposals for space research were satisfactorily considered and adopted at WARC-79. As a result we will have a stronger allocation status in the Radio Regulations at four frequency bands across the spectrum. These are 2025-2300 MHz,

7133-7320 MHz, 8400-8500 MHz, 12.75-13.25 GHz, 16.1-16.7 GHz, 31.8-32.3 GHz, and 34.2-34.7 GHz. The first three bands listed provide for both near earth and deep space activities. The bands beginning at 12.75 GHz up to 34.7 GHz provide new accommodation for deep space activities. While we did not achieve primary status in every band we believe the accommodations at a secondary level will satisfy our needs. Insofar as TDRSS is concerned, our proposals for secondary table allocations for space research at 13.4-14.0 GHz and 14.5-15.35 GHz were adopted by the conference.

Use of Geostationary Orbit and Planning of the Space Services. A number of countries (India, China, USSR, Iraq, Afghanistan) proposed that a future WARC be convened to plan certain space services in certain parts of the spectrum. However, there was no agreement among them as to which services or bands should be planned. For example, China proposed that only the new allocations to the fixed satellite service below 10 GHz should be planned, whereas India proposed that the FSS including feeder links to the broadcasting satellite service (BSS), would be planned in the entire 4/6 and 11/14 GHz bands. The USSR proposal was the most modest, with planning confined only to BSS feeder links. The Iraq proposal was the most ambitious, embracing all space services in all frequency bands.

All of the planning proposals were in agreement that planning should lead to a detailed plan of orbital position and frequency allotments to countries in the fashion of the 1977 WARC plan for the BSS. Nearly all of the proposals justified the need for a plan on the claims that the geostationary satellite orbit was rapidly filling up in the 4/6 GHz band and that the present regulatory procedures, characterized as "first-come, first-served", would deny equitable access to developing countries in the future.

The developed countries denied these claims, and presented arguments to show that detailed planning was, in their view, totally unsuitable for most space services and especially so for the FSS. They suggested that improvements in the regulatory procedures and/or new dynamic and flexible approaches to planning could be developed to meet the objective of guaranteeing equitable access to all countries. Equally important, these approaches would permit the efficient and economical use of the orbit-spectrum resource that is essential if a sufficient amount of the resource is to be accessible to each user at an affordable price.

This approach was unacceptable in principle to a number of administrations, both developed and developing. An acceptable compromise was worked out based both on proposals to the conference, and proposals which surfaced during the conference. The essential elements of this compromise were: (1) removal of outdated HF assignments in the Master Frequency Register; (2) reclassify remaining assignments according to needs and alternative means; (3) finding new frequencies for HF fixed assignments displaced by allocation changes ("reaccommodation"); (4) increased assistance by the IFRB to countries needing help in finding new frequencies, and in identifying interference; (5) revision of Article N12, and related texts, to implement these procedures. The "package" also includes a new resolution to the effect that these provisions are intended essentially for use by the administrations of developing countries, and that therefore administrations of developed countries should minimize their use of these provisions.

In summary, the U.S. made clear its appreciation and understanding of the problems of the developing countries, and played a prominent part in the extensive negotiations required in reaching acceptable compromises. These compromises will not have an adverse effect on U.S. interests - but we must do our part, after the conference, toward implementing these agreements.

Technical Assistance to Developing Countries. In the course of the conference the developing countries introduced several resolutions seeking new or increasing the existing assistance to them in the field of competence of the International Telecommunication Union. Following is the list of such resolutions:

(1) Relating to technical cooperation in maritime telecommunications, especially by providing technical advice and by assisting in training the Third World countries' staff;

(2) Relating to technical cooperation in national propagation studies in tropical areas designed to improve and develop the developing countries' radiocommunications;

(3) Relating to the development of national radio frequency management within the developing countries through such means as regional seminars and training;

(4) Relating to the transfer of technology in telecommunications for the purpose of developing services and attaining social, economic, and cultural objectives of the developing countries.

All of the above resolutions are basically in line with the United States approach to technical assistance since they look to the United Nations Development Program (UNDP) as the primary source of financing. They do not call for the establishment of either mandatory or voluntary funds for technical cooperation or refer to the need to change the existing institutional structure of the ITU.

The U.S. also participated in efforts to assist developing countries in introducing and utilizing computers in their frequency management activities. The conference adopted a new resolution that the ITU and its organization participate in this program by conducting educational seminars in the ITU regions, and by using educational resources available to the ITU to provide further training in this field.

Future Conferences. About two dozen specialized world and regional radio conferences were proposed at WARC-79. The conference approved three world conferences and six regional conferences. WARC-79 did not set specific dates for the world conferences, leaving this to the ITU Administrative Council to decide in terms of budget and other resource constraints. The approved conferences are:

(A) World Administrative Radio Conference for Mobile Services;

(B) Regional Administrative Radio Conference for planning the MF Broadcasting bands in Region 2 (first session March 1980; second session November 1981);

(C) Regional Administrative Radio Conference for the detailed planning of the Broadcasting Satellite Service in the 12 GHz band and associated uplinks in Region 2 (second quarter, 1983);

(D) Regional Administrative Radio Conference for planning Sound Broadcasting in the band 87.5-108 MHz in Region 1 (tentative: first session - third quarter, 1983);

(E) Regional Administrative Radio Conference for planning uplinks to broadcasting satellites operating in the 12 GHz band in Region 1 and 3 (tentative recommendation: fourth quarter, 1983);

(F) Regional (European Maritime Area) Conference to revise the 1948 Copenhagen Plan (tentative recommendation: second quarter, 1984);

(G) Regional Administrative Radio Conference to prepare a plan for the initiation of broadcasting services in the band 1605-1705 kHz in Region 2 (tentative recommendation: second quarter, 1985);

(H) World Administrative Radio Conference for the planning of the HF bands allocated to the broadcasting services (two sessions);

(I) World Administrative Radio Conference on the Geostationary Satellite Orbit and the planning of space services (two sessions).

Technical Matters. The U.S. made numerous technical proposals pertinent to spectrum management. These are too numerous to specify here in detail. Examples include specification of power limits, bandwidth, propagation characteristics, etc. U.S. objectives were fully met.

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